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Benno Kinnelman, et al

Homer Hoyt Institute

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The increasing tendency toward recreational activity has notably placed a heavy demand on existing facilities and has also created a shortage of recreational facilities during peak vacation periods. This potential strain on the ecological carrying capacity of recreational areas is an ever-increasing environmental concern. This study focuses on the problems and potentials between outdoor recreation and the environment. The areas studied include recreation on private land, along coastal areas, national parks and urban areas. All of the factors contributing to recreational demand--leisure time, education, disposable income, population growth and mobility--are forecasted to increase and will result in increased participation in recreational activities.

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Volume V

Outdoor Recreation and the Environment

by

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SECTION I
WORK AND LEISURE TIME

Time free from the necessity of work has traditionally been of secondary importance in a society based upon the Protestant ethic. The Calvinist tradition in America equated continuous labor and accomplishment with divine calling and salvation. In 1968, the National Advisory Commission on Civil Disorders recognized that "the capacity to obtain and hold a 'good job' is the traditional test of participation in American society."[1] Leisure time has had meaning only in contrast to work itself, as a period of time not devoted to constructive labor.[2]

While the prescription to work remains strong, changing values and conditions are challenging the work ethic. Americans increasingly look to their nonwork lives to fulfill needs not met by their jobs.

I.A The Changing Work Ethic

The growing emphasis upon leisure time reflects the disenchantment with work in an industrialized society. Automation and the division of labor have created a multitude of boring tasks.

For a significant number of blue-collar, unskilled laborers, work yields only extrinsic benefits. A study of 491 low-skilled industrial workers revealed that "for almost three out of every four ... work and the workplace [were] not central life interests." These persons looked for a sense of "enjoyment, happiness, and worth" outside their jobs.[3] Within a national sample of blue-collar workers, 74% expressed some commitment to socially acceptable jobs, but were "primarily concerned about the income from work."[4]

Even sufficient pay cannot avert the contempt generated by monotonous and meaningless jobs. Reporters Johnson and Kotz of The Washington Post found current attitudes toward work the "greatest challenge for the unions and for American society." Especially among the 22 million workers under age 30 (over 25% of the labor force) was there the "most striking evidence of frustration, anger, rebellion, and disenchantment."[5]

For professionals and other skilled personnel, work yields intrinsic as well as extrinsic benefits. Feelings of capability, accomplishment, and public service often accompany such jobs. The educational training necessary provides substantial income, security, and status. Measures of job satisfaction are extremely high in this group: one study found that 93% of the urban university professors, 91% of the mathematicians, 85% of the firm lawyers, and 82% of the journalists interviewed would select similar work again. These jobs provide an individual with a sense of identity and purpose while satisfying monetary needs.[6]

Yet even those with challenging occupations have reacted against the excesses of the work ethic. People who devote their lives solely to work are regarded by their peers as "one-sided, possibly sick, and certainly unfortunate."[7]

The resentment of mechanical tasks and reaction to a pervasive emphasis upon work have already affected the youth. Among a highly educated, young population accustomed to economic stability, work has "fallen into disrepute." A study of Stanford and Berkeley undergraduates revealed that they viewed a choice of careers "as a threat instead of an opportunity." Some have turned away from hard work and success to socially-oriented activities. An estimated 20,000 students a year, many of whom may be expressing their alienation from established work patterns, fail to complete their educations. Rather than choose jobs or careers, young people have increasingly turned to arts and crafts and accepted a subsistence living. Many are seeking satisfaction outside the labor structure.[8]

I.B Leisure Spending

Americans escape the frustrations and inadequacies of work through their leisure pursuits. At the end of a day's work, on weekends, during vacations, and after retirement, people spend money and time engaging in pleasurable activities. In April, 1972, U.S. News & World Report presented an analysis of what it termed the "leisure boom" in America. Leisure spending has risen steadily from $58.3 billion in 1965 to approximately $105 billion in 1972. The rate of increase in leisure expenditure has in fact exceeded that of total personal spending, as shown below.

	1965-67	1967-69*	1969-72	1965-72
% Change in Leisure Spending	21.7	16.3	27.1 (estimated)	80.1
% Change in Total Personal Expenditure	13.6	17.7	24.4 (estimated)	66.6

*The economic slowdown beginning in 1968 reduces the value of these figures in assessing broad trends over the decade.

Source: U.S. Department of Commerce Statistics in "Leisure Boom: Biggest Ever and Still Growing," U.S. News & World Report, LXXII (April 17, 1972), p. 42.

Yet these aggregate figures obscure the true boom which has occurred in the distribution of leisure dollars. In terms of participation and spending, outdoor recreation has become a major use of leisure time.[9]

This movement to the outdoors is documented by the U.S. News & World Report analysis. In 1967 Americans spent

TABLE 1

TOTAL SALES FOR RECREATION EQUIPMENT

(Millions of Dollars)

Year	Sleeping Bags	Tents	Winter Sports Equipment	Bicycles	Recreational Vehicles*	Snowmobiles	Motorcycles	All-terrain Vehicles	Dune Buggies
1960						1.5	33.6		
1961					87				
1962	33.5	51.7	20.0	197.9	112				
1963	37.3	55.1	25.0	204.6	156.5				
1964	41.2	60.5	30.0	209.1	198.5				
1965	46.2	66.3	34.6	216.0	308.2				
1966	45.0	65.0	41.7	228.9	370.8				
1967	47.3	67.0	50.9	244.2	446.4				
1968	51.2	73.7	61.1	265.9	791.8				
1969	55.6	83.4	73.9	290.7	1077				
1970	58.2	86.5	87.4	318.3	1149.9	187.5	277.4	9.5	5
1971	69.2	104.5	96.7	384.3	1629.5				
1972					2150 (estimated)				

*Recreational Vehicles include Travel Trailers, Truck Campers, Camping Trailers, Motor Homes and Pickup Covers.

Source: National Sporting Goods Association, _1972 - Continued Growth for Sporting Goods_, (Chicago: 1972), pp. 23-24; National Sporting Goods Association, _The Market for Athletic and Recreational Goods, Consumer Attitudes Versus Industry Adaptations, A Study of Trends and Subsequent Predictions_ (Chicago: N.D.); "Fun Cars'--A Boom That's Running Into Trouble," _U.S. News and World Report_, _LXXII_ (January 3, 1972), p. 32.

$9.6 billion on recreation-sports equipment, the most exclusively outdoor oriented category presented in the article. For 1972, the authors projected a total spending of $18 billion. This approximate doubling in expenditure within one category is reflected in the percentage it represented of total leisure spending for the two years. In 1967 recreation-sports equipment accounted for 13.5% of that year's leisure expenditure, while in 1972 it was expected to equal 17.1%. The dimensions of this increase are most clearly evident in sales for various types of outdoor equipment and vehicles (see Table 1). Sales for all but one of these have increased more than 100% over the specified intervals. All such items have become popular means of enjoying the outdoors.[10]

I.C Participation in Outdoor Recreation

A complementary rise in outdoor recreation participation is also well documented. When the Outdoor Recreation Resource Review Commission published its findings in 1962, it estimated that in 1960 there had been approximately four billion occasions of summer outdoor activity. By 1965 this number had grown to over six billion and the anticipated figure for 1980 was over ten billion occasions. Attendance records shown in Table 2 for state and national parks illustrate the same growth in participation:

TABLE 2

Visitor Statistics
(Thousands)

	1960	1967	1970
National Park System (total)	79,229	139,675.6	172,004.6
State Parks (total reporting)	259,001	391,062.7	482,536.3

Source: U.S. Department of the Interior, National Park Service, Public Use of the National Parks; A Statistical Report, 1960-70 (Washington, D.C.: Government Printing Office, 1971), p. 5; Barry S. Tindall, ed., State Park Statistics, 1970 (Washington, D.C.: The National Conference on State Parks, 1971), p. 9.

These indicators confirm an observation already evident in 1962, that the demand for outdoor recreation is "surging." The rise in participation has far exceeded previous forecasts.[11] All measures of involvement point to a tremendous movement outdoors.

I.D Participation Factors

I.D.1 Population Growth

The rapid increase in outdoor recreational activities can be partially explained by changes in various factors related to participation.[12] Population growth contributes to recreational demands and use. During the decade 1960-70, the American population increased at a rate of 13.4% from 178.7 million to 202.5 million persons. Such growth alone would lead to greater numbers of participants.[13]

I.D.2 Age

Age also affects involvement in certain outdoor activities. People under 30 are usually the most active participants. From 1960 to 1970 the median age of the population dropped from 29.9 to 28.2 years. This decrease in age is reflected in the shift toward younger age brackets. While 57% of the 1960 population was 34 years old or younger, 59.4% of the 1970 population fell within this category. Of particular importance are the changes in the 16 to 19 and 20 to 24 year age groups, periods of great outdoor activity (see Table 3). Both in terms of growth and age distribution, the population dynamics of the last decade insured the rise in outdoor participation.[14]

I.D.3 Available Leisure Time

Another major factor affecting recreational involvement is the amount of leisure time available to the population. Leisure in this context refers to time free from the obligation of work, time to be used as an individual desires. The increase in free time for American workers has principally taken the form of shorter working hours per week, more paid holidays, longer vacations, and earlier retirement. In the past, average working hours have declined significantly, yet recent alterations in the length of the workweek are difficult to detect. The Bureau of Labor Statistics estimates shown in Table 4 of average hours completed by full-time employees show minimal change.[15] Although these figures obscure significant differences between industries and types of work, they do indicate that sizable amounts of leisure time have not appeared through reductions in the workweek.

However, increased vacations and holidays have recently provided workers with substantial blocks of leisure time. In 1968, two-thirds of all employees in the private non-farm economy received paid vacations. From 1960 to 1969 the number of vacation weeks rose nearly 50% from 87 to 129 million weeks. The average length of a worker's vacation increased from 1.3 to 1.7 weeks, while that of full-time employees rose from 1.8 to 2.2 weeks. There has also been a gradual increase in paid holidays. Office workers gained 0.3 days on the average between 1960 and 1968 while plant workers attained an additional 0.7 days. This brought the

TABLE 3

Population Age
Percent Distribution

	1960	1970
Under 5 years	11.3	8.8
5 to 13 years	18.4	18.4
14 and 15 years	3.1	4.0
16 to 19 years	5.8	7.2
20 to 24 years	5.9	7.7
25 to 34 years	12.5	12.3
35 to 44 years	13.6	11.4
45 to 64 years	20.3	20.6
65 years and over	9.0	9.7

Source: U.S. Bureau of the Census, Current Population Reports, Series p. 23, No. 37, "Social and Economic Characteristics of the Population in Metropolitan and Nonmetropolitan Areas: 1970 and 1960," (Washington, D.C.: Government Printing Office, 1971).

TABLE 4

Average Hours Completed
by Full-Time Employees

Year	Average Hours Per Week
1955	46.0
1960	45.8
1965	46.2
1966	45.7
1967	45.3
1968	45.2
1969	45.3
1970	45.1

Source: Geoffrey H. Moore and Janice Neipert Hedges, "Trends in Labor and Leisure," Monthly Labor Review, LXXXIV (February, 1961), 5.

average total paid holidays for office workers to 8.0 days and for plant workers to 7.5 in 1968. Longer vacations and additional holidays, which usually precede or follow weekends, provide units of time that facilitate participation in outdoor activities.[16]

Earlier retirement is also becoming more common. From 1947 to 1969, the proportion of men age 65 or over who were working dropped from 48% to 27%. Although older people may participate less frequently in certain activities, convenience-oriented facilities and vehicles encourage this group to remain active participants in outdoor recreation. As retirement becomes common at age 60 or even earlier, more years will be available for outdoor pursuits.[17]

I.D.4 Personal Disposable Income

The rapid rise in personal disposable income has also spurred leisure activities. Many outdoor pursuits require large expenditures for equipment or vehicles. As shown in Table 5 Americans achieved substantial increments in disposable income on a yearly basis. This money has stimulated the boom in recreation related industries and enabled people to engage more frequently in desired activities.

I.D.5 Educational Levels

Higher levels of educational attainment also appear to result in greater outdoor participation. Between 1960 and 1970, the educational level of persons within the 25 to 29 age group increased significantly. While 64.4% of the population in 1960 had completed four years of high school or more, 78.2% did in 1970. Persons with at least four years of college increased from 13.1% to 18.7% of the population during the same time interval. Exposure to a spectrum of ideas and life styles may stimulate an interest in nature and various outdoor activities.[18]

I.D.6 Transportation

Improvements in transportation have made the task of reaching the parks, forests, seashore, and resort areas much easier. Americans are increasingly mobile as a result of massive highway construction. Since 1960, the interstate highway system expanded 300%, from 10,440 miles to 32,988 miles at the end of 1971. These routes have granted automobiles and large vehicles access to recreation areas throughout the country. More frequent and longer trips in less developed regions are now possible.[19]

A larger and younger population with more leisure time, disposable income, education, and mobility has greater opportunity and capability of participating in outdoor activities. While these factors have provided opportunities for outdoor recreation, Americans have expressed a preference for this use of their leisure time. Frustration with metropolitan living, concern for the environment, and a

TABLE 5

Personal Disposable Income (Billions of Current Dollars)

1960	350.0
1961	364.4
1962	385.3
1963	404.6
1964	438.1
1965	473.2
1966	511.9
1967	546.3
1968	591.0
1969	634.2
1970	687.8

Source: U.S. Department of Commerce Statistics

TABLE 6

Occupation and Weekend Trips and Vacations

Occupation	% of Respondents Who Took Weekend Trips	% of Respondents Who Took Vacations
Professional	54	67
Managerial	55	63
Clerical	40	48
Sales	44	60
Craftsmen & Foremen	38	50
Operatives	33	44
Service Workers	27	38
Laborers	15	38

Source: Rabel J. Burdge, "Outdoor Recreation Studies in Vacation and Weekend Trips," Department of Agricultural Economics and Rural Sociology, A.E. & R.S. #65, (University Park, Pennsylvania: The Pennsylvania State University, August, 1967), pp. 9, 19.

yearning for naturalism have all influenced the movement outdoors.

I.D.7 Occupation

All segments of society have not been affected equally by these developments. Studies conclude that the most outdoor-oriented groups are those with rewarding work, advanced education and financial security. Responses from a random, stratified sample of persons in Allegheny County, Pennsylvania, established a relationship between occupational prestige and use of leisure time. Those persons with the most prestigeous jobs (professionals, high level management, and other white-collar workers) "were the most active in the listed sixteen forms of outdoor recreation." For nearly all the activities included in the survey, the probability favored high middle and upper class involvement. Although many in this group worked long hours, they had ample income to pursue activities in their free time.[20]

Further investigation correlating participation in weekend and vacation trips with occupation yielded similar conclusions. While 37% of the random sample reported taking weekend excursions, participation varied considerably within occupational categories (see Table 6). Those groups with long weekly hours, the professional and managerial class, were the most active users of their leisure time.[21]

Although a larger percentage of the sample took vacations (51%), similar differences existed between occupational levels. A greater proportion of persons with professional and managerial jobs took vacations than did members of any other occupational category. These persons are financially able to engage in their diverse interests after fulfilling professional demands.[22]

I.E Recreational Activities: Supply and Environmental Impact

I.E.1 Facilities

The rapid growth in outdoor participation has occurred upon a supply of recreational land and facilities which has increased only slightly. This contrast is most vivid in the graphic representation of Federal recreation visitations and acreage from 1965 to 1970. While supply is expandable, there are ultimate limits to the number of beaches, parks, and resort developments that can be established since recreation will be competing with a host of other land uses for increasingly scarce open space. Thus existing lands and facilities must be preserved as a reusable resource.[23]

I.E.2 Impact

Outdoor recreational activities can cause environmental damage by impairing the reusability of an area. Maintaining a recreational facility requires balancing the intensity and types of use with the tolerance of the resource. When a facility's ecological carrying capacity--its ability to support certain numbers of people, kinds of activities, and frequency of use--is exceeded, the facility is endangered. Outdoor activities can significantly harm the ecosystem and thereby reduce the limited supply of recreation facilities.

Recreational use has potential psychological as well as ecological effects. Certain outdoor experiences require low intensity land use. This precludes large numbers of people engaging in the same or conflicting activities simultaneously. Congestion caused by too many participants can decrease the quality of the recreational experience. Similarly, opposing uses of the same land can destroy the enjoyment of one or both activities. How intensely a recreational area is used and the types of recreation permitted significantly affect the natural and social environment.

I.F Focus of Study

The relationship between outdoor recreation and the environment is the focus of this study. Recreation at privately developed facilities, coastal areas, and in the cities will be explored with regard to supply, demand, and environmental consequences. In terms of dollars and participation, Americans are expressing their desire for the outdoors. However, use must be viewed in terms of ecological and psychological tolerance, or natural resources will deteriorate and the recreational experience will be lessened. Following the analysis of current participation and its effects, projected trends in recreation will be explored.

FOOTNOTES

1. National Advisory Commission on Civil Disorder, *Report of the National Advisory Commission on Civil Disorders* (New York: Bantam Books, 1968), p. 252.

2. The importance of work in America has been emphasized by Seymour Wolfbein, *Work in American Society* (Glenview, Ill.: Scott, Foresman and Co., 1971), p. 173:

> "Perhaps nowhere else has work been considered to be as intrinsically good as in the United States since the earliest colonial times."

3. Alan Fox, *A Sociology of Work in Industry* (London: Collier-Macmillan, Ltd., 1971), pp. 13, 14, 23; and Robert Dubin, "Industrial Workers' Worlds: A Study of the Central Life Interests of Industrial Workers," *Social Problems*, III (January, 1956), 131, 140.

4. Curt Tausky, "Meanings of Work Among Blue Collar Men," *Pacific Sociological Review*, XII (Spring, 1960), 54.

5. Haynes Johnson and Nick Kotz, "A Basic Problem: Work Attitudes Changing," *Washington Post*, April 18, 1972, Section A-1, p. 12; and Walter S. Neff, *Work and Human Behavior* (New York: Atherton Press, 1968), p. 35.

6. Robert L. Kahn, "The Meaning of Work: Interpretations and Proposals for Measurement," in *The Human Meaning of Social Change*, ed. by Angus Campbell and Phillip E. Converse (New York: Russell Sage Foundation, 1972), pp. 182-83.

7. Robert S. Weiss and David Riesman, "Some Issues in the Future of Leisure," *Social Problems*, IX (Summer, 1961), 83.

8. Lewis M. Andrews, "Communes and the Work Crisis," *Nation*, CCXXI (November 9, 1970), 460-61.

9. U.S. Department of Commerce Statistics in "Leisure Boom: Biggest Ever and Still Growing," *U.S. News & World Report*, LXXII (April 17, 1972), 42-45. While Americans are allocating more money on leisure activities, their total expenditures are also increasing rapidly. The chart below indicates that the percentage which leisure spending forms of total personal consumption has increased only slightly.

	1965	1967	1969	1972 (est.)
Leisure Spending / Total Personal Expenditure =	13.4%	14.4%	14.2%	14.6%

10. "Leisure Boom," pp. 42-45.

11. The Outdoor Recreation Resources Review Commission predicted a 20% increase in recreation participation from 1960 to 1965; recreation occasions actually increased by 51%. U. S., Department of the Interior, Bureau of Outdoor Recreation, Outdoor Recreation Trends (Washington, D.C.: Government Printing Office, 1967), pp. 7, 12.

12. For discussion, see: Charles J. Cicchetti, "Population, Its Characteristics and Congestion as They Affect Participation in Outdoor Recreation in the United States," in Resource and Environmental Consequences of Population Growth in the United States, ed. by Ronald G. Ridker, unpublished report to the Commission on Population Growth and the American Future.

13. U. S., Department of Commerce, Bureau of the Census, Current Population Reports, Series P-23, No. 37, "Social and Economic Characteristics of the Population in Metropolitan and Nonmetropolitan Areas: 1970 and 1960," (Washington, D. C.: Government Printing Office, 1971), pp. 15, 17.

14. Ibid., p. 16.

15. Whether working hours have declined at all is subject to considerable debate. See John P. Robinson and Phillip E. Converse, "Social Change Reflected in the Use of Time," in The Human Meaning of Social Change, p. 44.

16. Geoffrey H. Moore and Janice Neipert Hedges, "Trends in Labor and Leisure," Monthly Labor Review, LXXXXIV (February, 1971), 4-5.

17. Ibid., p. 4.

18. U. S., Department of Commerce, Bureau of the Census, "Social and Economic Characteristics of the Population," p. 4.

19. U. S., Department of Commerce, Bureau of Public Roads, Quarterly Report on the Federal-Aid Highway Program (Washington, D. C.: Government Printing Office, 1960-1966).

20. Rabel Burdge, "Levels of Occupational Prestige and Leisure Activity," Journal of Leisure Research, I (Summer, 1969), 272-273.

21. Department of Agricultural Economics and Rural Sociology, "Outdoor Recreation Studies in Vacation and Weekend Trips," by Rabel J. Burdge, A. E. and R. S. No. 65 (University Park, Pennsylvania: Pennsylvania State University Press, 1967), pp. 5, 12, 15.

[22] Ibid., pp. 19-20. Recent British studies confirm these findings. The first national recreation survey in Great Britain found that "the higher the income level, occupational class and educational status of contacts, the greater the number of pursuits they mention for their weekend before interview, and the greater the importance of the 'active' compared to the 'passive' recreations. In short, those with the highest socioeconomic status not only do more things, but do more active things." Stanley Parker, The Future of Work and Leisure (New York: Praeger Publications, 1971), p. 60.

[23] Cicchetti, "Population," p. 3.

SECTION II

OUTDOOR RECREATION ON PRIVATE LANDS

II.A The Recreational Role of Private Enterprise

The Outdoor Recreation Resources Review Commission has stated that the most important single factor in outdoor recreation is private endeavor. Noting that approximately two-thirds of the nation's land is privately owned, the Commission recommended that national policy should encourage private enterprise to provide recreational opportunities and services whenever possible.[1]

Former Secretary of Agriculture, Orville Freeman agreed:

> The outdoor recreation needs of the American people cannot be met nor will they ever be met by the combined efforts of local, state, and federal governments alone. These needs of the unsatisfied appetite for open spaces and green areas which grows more rapidly than our population increases...will be met only as we turn to that portion of our land area which is in private hands.[2]

The private sector is playing a major role in providing outdoor recreational opportunities for the American public. In 1965, a Bureau of Outdoor Recreation survey of private recreational facilities in the United States listed over 131,000 enterprises, owning a total of 30 million acres of land, serving over a billion patrons.[3]

Since private enterprise is operated primarily for a profit, its objective is to provide activities or programs which will appeal to customers.[4] If a competitor builds new and better facilities, the private owner generally feels compelled to do one of three things: acquire new land upon which to provide additional activities, provide new opportunities on undeveloped land which he already owns, or build new facilities to increase the density of users in areas which he has already developed.

A fourth possible solution, improving the quality of the recreational experience, tends to be overlooked by most landowners. Clawson and Knetsch point out that more intensive use of the land may mean a higher net income in the short run; but such use may mean a long-term deterioration of the area physically, in terms of satisfaction per unit of use, or both.[5]

Private owners operate a wide range of recreational facilities. This study investigated several recreational enterprises and their environmental effects, including private forest lands, camp grounds, ski resorts, second home developments, and theme parks.

II.B Private Forest Lands

Opening the vast amount of private forest land in the United States to the general public could provide a means of relieving the National Parks and Forests of their currently overcrowded conditions. Over sixty percent of the forest land of the 48 contiguous states is privately owned. The American Forest Institute reports that 61.4 million acres of privately owned forest land and more than 86,000 miles of company roads are open to visitors.[6] Table 7, which indicates the percentage of industrial forest land open for public recreation, suggests that a substantial amount of public recreation is provided on industrial lands.

However, a large percentage of the general population is unaware that industrial lands are open for public use. A public opinion survey[7] which asked, "Do forest industries open their lands for recreation?", gained the following responses:

Response	Percent of Sample
Yes, they do	24%
No, they don't	41%
Some do, some don't	16%
Don't know	20%

Therefore, the mere fact that the lands are open does not assure their utilization for recreational purposes. Furthermore, even if the public knew that these lands were open, people might be unable to distinguish between those which they were welcome to use and those which were closed.

The 61.4 million acres of private forest land which the American Forest Institute estimates are open for recreational purposes represent only fifteen percent of the total forest acreage in private holdings. Since logging goes on in only a small part of a forest at any one time, companies could leave the remainder of the forest open until it is time to cut the trees in a designated area. However, there are several obstacles which discourage owners from opening forest lands to the public.

A number of forestry firms say that they would have no complaint if visitors merely wanted to picnic, hike, or pick berries. But the public wants organized recreation, facilities for outdoor sports, showers, toilets, and electric power outlets, all of which are costly. The Forest Service estimates that the cost of providing one camping unit is \$600-\$700, not including provisions for site clearing, fire hazard reduction, maintenance, management, and damage repair.[8] The Georgia-Pacific Company reports that it spends \$100,000 per year to repair and maintain 23 recreation areas on its western land.[9]

TABLE 7

INDUSTRIAL FOREST LAND OPEN FOR PUBLIC RECREATION

Activity	Percent of Land Open
Fishing	98%
Hunting	92%
Hiking	90%
Picnicking	88%
Camping	86%
Swimming	86%
Berry Picking	83%
Organized Recreation	47%
Winter Sports	38%
Other	19%

Source: Kenneth S. Fowler, Obstacles to the Recreational Use of Private Forest Lands (Washington, D. C.: Government Printing Office, 1967), p. 15.

Many forest landowners are reluctant to charge the public for use of their land; government parks usually charge little or nothing for utilization of their facilities, and private firms do not want unfavorable comparisons. Kern and Driscoll report that recreation, especially in rural areas, has long been considered a non-marketable good.[10] However, Fowler believes that since the Land and Water Conservation Fund recognizes the desirability of charging user fees for public recreation on Federal land, fees on private lands can be substantially increased with minimal public opposition.[11]

Another problem concerns liability. If either an explicit or implied invitation draws visitors to the land, the owner is responsible for their safety. Any landowner desiring to minimize his liability to visitors will attempt to exclude them by posting his land even if he does not object to their presence.

Several companies report that the biggest drawback in opening their lands to the public is the damage inflicted by vandals. The St. Regis Paper Company has closed a popular picnic and water sports area in Montana because for two consecutive years vandals have burned bath house floors, chopped a dock in half, overturned outhouses and demolished concrete fireplaces.[12] Since private forest lands in the United States are a potential source of relief for National Parks and Forests, both State and Federal governments should become involved in the process of eliminating these obstructions to their use.

II.C Private Campgrounds

A 1965 Bureau of Outdoor Recreation study reported that there were 3,456 private campgrounds covering 1.7 million acres of land, with a total capacity of nearly four million people.[13] By 1970, the number of private camp sites had increased to over 427,000.[14] In several areas of the United States there are now more private than public sites. Over 1,000 commercial campgrounds were in operation in 1966 in the fourteen northeastern states from Maine to Ohio. The ratio of private campgrounds to public campgrounds is three to one in the region as a whole, and as high as seven to one in Maine.[15]

The cross-country reservation system offered by privately owned campground franchises eliminates uncertainty about overnight sites. Physical facilities are superior to those of public parks; the new franchised campgrounds tend to set high standards. In addition, cross-country camping trips can be budgeted closely with reasonable accuracy.

The leader in the private camping industry is Kampgrounds of America, Inc. KOA franchise operators are primarily farmers and ranchers with unused land who pay the company an initial fee of $8,900 plus $300 a year and eight percent of the camper fee (from $2 to $6 per night). KOA gives the franchise operator national advertising, a toll-free telephone-reservation service listing in the Kampground Directory, and rigidly enforced standards.[16] The number of KOA campgrounds has increased rapidly, from 385 in 1969 to over 700 in 1971. They serve approximately eight million campers.[17]

KOA illustrates the role which the private sector can assume in providing outdoor recreational opportunities for the American public. However, private owners must provide facilities without allowing such incidents as the following to occur:

> In one western campground recently, 200 units--campers, trailers, motor homes and tents--were jammed into a space designated for 68. Trash floated down a lone creek and clotheslines erupted along its banks. All many anglers could hook were shirts, pants, and empty milk cartons.[18]

The private sector needs to provide camping facilities which harm the environment as little as possible and which enable the camper to have the quality experience he seeks. If the owner refuses to provide such sites, the government must enforce regulations which require protection of the environment. Government ordinances could specify minimum acceptable sanitary standards and maximum density regulations.

II.D Ski Resorts

Private developers are providing recreational opportunities on leased public land to capitalize on the growing snow skier market in the United States. According to a BOR study, there were 639 private skiing enterprises in 1965 which were capable of handling 187,530 persons at any one time. Over 20,900 acres of land were devoted to the sport of snow skiing.[19]

The number of skiers in the U. S. rose from approximately 2.4 million in 1960 to 5.7 million in 1965. It is estimated that, by 1977, the U. S. total will top ten million. Ski industries estimate that, in 1971, skiers spent $1.3 billion on equipment, lodging, travel, lift tickets, and entertainment at winter resorts. Industry officials are confident that skiing will be a $2 billion a year activity by 1974.[20] Skiing has become a major business in the United States.

The very nature of skiing tends toward environmental damage. Trails must be cleared, lifts built, and lodging facilities developed in order to handle the growing number of skiers.

The U.S. Forest Service encourages the development of winter resorts to meet public needs. Consequently, in 1949 it issued a prospectus which invited bids from the private sector to develop the Mineral King Valley in the Southern Sierra Nevadas as a winter sports resort. Although there apparently was some interest, no bids were put forth at that time because the only access road to the area was inadequate.

In 1965, the Forest Service again invited bids for a development estimated to cost $3 million, not including the expense of building a new access road. While the Forest Service was considering the six bids which met the minimum standard requirements for resort development, a new road was added to the state highway list without legislative hearings. The only feasible route to Mineral King would cut across approximately nine miles of Sequoia National Park. Although in 1916 Congress prohibited any use of the national parks which does not conform to the fundamental purpose of conserving natural and historic objects and the scenery, the proposed road is intended to connect a point on one side of the national park with a commercial enterprise on the other.

With the highway obstacle eliminated, the Forest Service accepted the proposal of Walt Disney Productions for a $35 million project. Disney was issued a three-year permit to complete the necessary plans and surveys. The Sierra Club, which had originally supported the idea of having a resort in the Mineral King area, opposed the development primarily because of its size. The winter resort, costing approximately $3 million, described by the Forest Service was to include lifts or tramways with an ultimate capacity of 2000 persons per hour, parking facilities for 1700 cars, and overnight accommodations for 100 persons. The Disney development will have parking facilities for 3600 vehicles, a 1030-room hotel complex, and a capacity for 8000 daily skiers.[21] The Sierra Club felt that such numbers would result in overcrowding, lead to erosion from road damage, and upset the ecological balance of the valley. The Club also opposed the highway across the Sequoia National Park.

There was considerable opposition to the development even within the Forest Service. In a 1967 memorandum, personnel in the Range and Management Wildlife Section stated:

> The total basic concept of development appears badly biased in orientation toward a highly artificial, continued situation, without any real attention to ecological factors.... Specifically, stream diversions and channel treatment, flood and debris control, surface water supply development, and sewage disposal proposals are all of a nature we find severely damaging or unacceptable. It is recognized that development of high intensity year-round recreational use in this restricted sub-alpine area is bound to result in pronounced impacts and certain unavoidable changes.[22]

The road threatens the vegetation of the National Park, particularly the giant sequoias. Drainage from road construction could wash away the thin soil that protects the shallow root structures of the trees. Michael McCloskey, executive director of the Sierra Club, emphasizes the probable damage to trees along the road from auto pollutants that will coat trunks, branches, and leaves. He points out that smog in Los Angeles has poisoned numerous trees.[23]

Increasing the number of people entering Mineral King may destroy the natural environment of the valley itself and of adjacent portions of the National Park. In Yosemite Valley, 150 miles north of Mineral King, the Park Service is currently correcting past errors. Yosemite has been plagued by smog, crime, noise pollution, and problems with sewage disposal. The number of camp sites has been reduced by half, and there will be no further increase in overnight accommodations. The peak daily usage projected for Mineral King would produce three times the concentration of people which has nearly overwhelmed Yosemite in recent years.[24]

The Sierra Club filed a suit against Disney Productions and the National Park Service which eventually reached the Supreme Court. In a historic ruling, the Court decided 4-3 that the Sierra Club had failed to show that it or any of its members would be "significantly affected by the development." Instead they had done no more than vindicate their own value preferences. Justice Potter Stewart did say, however, that "aesthetic and environmental well-being are "important ingredients of the quality of life" and "are deserving of legal protection." Furthermore, he broadly hinted that if the Club amended its complaint to claim that its campers regularly use the area, it might succeed.[25] The decision was significant in determining whether conservation groups and other citizen's organizations, even though not directly involved, are eligible to challenge Federal policies and actions affecting the environment.

Another controversial year-round ski resort being developed, Big Sky of Montana, Inc., is scheduled to begin operations in 1973. The principal owner is the Chrysler Corporation; Chet Huntley is Chairman of the Board.

The site selected for the resort complex is a semi-primitive area on the West Fork of the West Gallatin River. The project will consist of self-contained winter and summer centers. Attractions at the summer Meadow Village will include an 18-hole golf course designed by Arnold Palmer, rodeo grounds, tennis courts, a swimming pool, home sites, and a 50-acre lake with camping facilities. Winter activities will be centered around Lone Mountain. Facilities will include ski slopes on two sides of the village, a total of five ski lifts with a capacity of approximately 4,000 skiers, and a variety of private shops and stores.

Environmentalists concede that Big Sky has taken a number of unusual steps to protect the environment. Two tertiary sewage treatment plants are to be installed, and the effluent will be used to irrigate the golf course. Solid wastes are to be employed in various ways to help rebuild soil in areas scarred by construction. Special effort has been taken to prevent soil erosion on the ski slopes.[26]

However, the Rocky Mountain Center on Environment, while admitting that Big Sky is "perhaps the first major land development in the West that will have made exhaustive environmental studies prior to making irretrievable development decisions," states that additional studies are needed to assure that the environmental impact of the development is minimal. For example, Big Sky studies have considered only those immediate areas to be developed. No extensive studies have been conducted in the adjacent Spanish Peaks Primitive Area, where several species of wild animals roam.[27] Furthermore, the very presence of Big Sky may generate irresponsible land use development in the area.

The resort controversies bring to light the issue of leasing public lands to private developers who have not satisfactorily examined the environmental impact of their development. Private developers should recognize their responsibility to protect not only the environment within their properties, but also to aid in the environmental protection of adjacent areas. Such action preserves the aesthetic value of the area and enables the vicinity to provide a high quality recreational experience.

After the resorts have been developed, land which has previously been open to anyone who cared to enter it will be accessible only to those who are able to pay the usually high fees required for the utilization of the new facilities. The total recreational area available to the general public lessens as private developers build each new resort area.

Resort development and tourism have made a number of negative economic and environmental demands on the states in which they are located. There is constant pressure to improve the highway system in order to reduce travel time for visitors. Additional police officers are needed to protect the large number of tourists. More government officials on the state, Federal, and local levels must be hired to carry out various administrative duties.

One argument frequently used in defense of tourism is that the cost of providing government services is offset by the tax revenue generated by the tourist industry. However, many state and county officials in Colorado, for example, believe that these tax benefits have not been realized and the burden of providing services to tourists falls on the residents within the state.

Due to the absence of a powerful planner and strict zoning laws, good environmental design and control of possible pollution effects are frequently left up to the good will of individual developers. If a developer does not control a majority of the land in an area land speculation is prominent and zoning tends to be haphazard.

Ranchers are unable to resist selling their land for prices which are considerably above what the land would bring if used for agricultural purposes. The result is speculative acquisition and land subdivision on a frightening scale.

At the present time, planning is minimal. The Federal government has failed to develop a national land use policy. In several states government appears to be strongest on the county level. In Colorado, although regional and state land use and planning commissions make recommendations, the board of county commissioners finalizes decisions. Typically, the county commissioners are ranchers who lack the experience necessary to handle rapid urbanization.

Relations between the ski resort developer and government are complex. On the Federal level, resort operators must obtain permits from the Forest Service for any lifts and runs on Forest Service lands; in Colorado, fifty percent of the mountain land is owned by the Forest Service. By withholding permits, the Forest Service can force the developer to conform to certain requirements on base facilities, including provisions for adequate parking, treatment facilities, and employee housing. It can require developers to control or avoid dangerous avalanche areas and to avoid delicate plants and migrating wildlife.

The role of environmental groups in controlling ski resorts is critical. It has virtually become a matter of course that developers have land-use and environmental studies conducted by individual consultants or environmental consulting firms. An environmental group can insist that impact studies are done properly and suggest alternative recreational uses of the land. By employing legal tools, they can further insure that the studies are taken into consideration in the developer's final plan.

In planning new ski facilities, American developers could profit from observing the outstanding facilities provided by the French.[28] All French resorts are planned within a regional framework of the total recreational plan for the entire French Alps. Planning is under the jurisdiction of a joint inner cabinet commission of the French Federal government which derives its powers and funds from five Federal ministries: interior, agriculture, economic, finance, and environment. The Commission controls the mountain development, provides a positive consulting service to the developer and the township, and negotiates on behalf of the township for all lift and trail concessions granted to the developer.

Ski villages in France are on a walking scale (i.e., 700-800 meters in length). The village is on one level, and no automobiles are allowed. From the outset, limitations are set on village size and population; usual limitations are approximately 5,000 beds, and a developed area of between 20 and 60 acres with no sprawl. The single village must be part of a complex of four-to-six villages. Recreational and all other services are ratioed in terms of the mountain's normal (not maximum) skiing capacity.

The entire resort is integrated to serve the skier. The uphill side of the resort (called the snowfront) is the central recreational area of the resort, from which many lifts depart and to which all ski trails drain. The downhill side of the contour linear resort must be the entry point for the access road, parking area and service delivery area, all of which are two-to-three levels below the "living" level of the village.

As a result of governmental planning, French ski resorts are well planned and regulated. Furthermore, each new resort avoids mistakes made by previous ones. Although the structure of the French government is considerably different from that of the U.S., a mountain planning commission could help solve problems brought about by ski resorts in this country. In addition to regulating ski facilities, the commission could also attempt to control the multitude of problems resulting from land speculation. Perhaps in this manner ski communities of future years may be well-planned, environmentally conscious resort developments.

II.E Second Homes

The Census Bureau's 1967 study of second homes indicated that a total of 1.7 million U.S. households had second homes, 25 percent of which were built between 1960 and 1967. Second home construction has increased from an average annual rate of 20,000 units during the 1940's to 55,000 units in the early 1960's. Approximately 300,000 U.S. households indicated that they expected to buy or build a second home within the two-year period following April, 1967.[29] The 1.7 million second homes in 1967 were valued at about $10 billion and covered 3,296,000 acres of land. By 1974 approximately 388,000 second homes will be added at a value of $3 billion, covering an estimated 820,000 acres.[30]

In 1967, the median income of second homeowners was $9,600. Approximately 47 percent had an annual income of over $10,000; 19.3 percent had an income of under $5,000 a year.[31]

People buy second homes for a variety of reasons. The second home may serve as a peaceful retreat from urban life or a place for city children to learn about nature. The owner may want a base for a specific sports activity such as skiing. The second home may be considered an investment; the purchaser often serves as a middleman, holding his land for a period of time, and then selling it at a profit.

The Census Bureau study found that 63.2 percent of the second homes were used on a seasonal basis, 28.5 percent were used occasionally throughout the entire year, and 6 percent were used for retirement purposes.[32] A vast majority of the second homes are within 200 miles of the owner's primary residence. The Bureau of Outdoor Recreation compiled the following statistics regarding travel distance and second home ownership:[33]

Travel Distance from Primary Home	Percent of Second Home Owners
0 - 50 miles	31.1
50 - 100 miles	27.9
100 - 200 miles	20.3
200 - 500 miles	12.1
500 - 3500 miles	8.6

As transportation systems improve and workweeks become shorter, the distance between primary and secondary homes may increase.

Although exact figures are not available, it is reasonable to assume that the number of companies involved in second home developments has increased substantially over the past ten years, resulting in a very competitive situation. Various developments vie for consumer attention by offering luxurious or innovative "extras." For example, the Lansing Corporation is marketing a 10,000-lot River Lakes Ranch recreation community near Redding, California, which offers residents such facilities as an airstrip, a new clubhouse, camping grounds, a man-made lake, and an authentic western working ranch.[34] In its 1966 study of New England vacation homes, the BOR found that approximately seventy-four percent of the purchasers selected their second home because of the qualities of the site.[35]

Wendell Martin lists certain criteria property must meet to be acceptable to a developer. The area should be within four hours travel time from urban centers to reduce travel time for prospective buyers. Site characteristics must include good scenic features (such as meadow lands, mountains, or a body of water), developed topography, adequate subsoil, good drainage, and a safe water supply. The climate must be satisfactory. Access to the area must be available on an all weather, paved major highway, or by air to within thirty minutes of the site. Furthermore, a range of recreational activities should be available.[36]

Although waterfront property is particularly desirable, it is at a premium. However, the lack of water does not thwart some ambitious developers. For example, in Texas areas where there is a scarcity of inland water, 60 reservoirs have been created and resort communities have been quickly erected around them. In Michigan, there are approximately 500 second home developments ringing lakes and dotting forests.

A large number of people who buy homes to escape urban problems find the same conditions in rural settings. In southern Wisconsin, which serves as a resort area for residents of both Milwaukee and Chicago, Lake Delavan has changed from the clear, cool waters which characterized the lake prior to second home development to a murky lake which is clouded with human waste. Cottages on the shore stand within three or four feet of each other, more densely packed than many areas of Milwaukee. Door County, Wisconsin, which handles about 80,000 visitors on a summer weekend, has been afflicted by serious outbreaks of gastrointestinal problems due to over-utilized--or in some cases, non-existent--sewage systems.

In one subdivision in California's Nevada County, the access road was formerly steep and had no pavement or slope protection. This particular area of northern California receives an excess of fifty inches of rain annually. As a result of erosion, lot purchasers had to pay for reconstruction of a road or road improvements before they could even reach their property.[37] This problem, which appears to be common near new developments, is significant because of the vast quantity of soil cover which is washed away.

In New Mexico, approximately 100 companies control more than one million acres of land, and have planned enough lots to triple the state's population. Dust from the 8,000 miles of access roads contributes significantly to air pollution. Perhaps the biggest problem in the state is the water supply, which will not be sufficient for a heavy migration of lot buyers. Zane Spiegel, an engineering consultant and former state hydrologist, says that the water table has fallen 100 feet west and south of Santa Fe in recent years.

A bill was introduced in the state legislature to authorize the state to reject new subdivision plats unless the developer proved that the water supply and sewage facilities would be adequate for the planned population and to require subdividers to reveal pertinent information about the land to prospective buyers. However, subdividers, ranchers (many of whom hope to see their land to subdividers), home builders, and the Realtors Association of New Mexico opposed the proposal. Furthermore, some of New Mexico's most prominent political figures are involved in land development, associated with subdividers, or own land. Ultimately the bill was defeated.[38]

The State of Colorado is attempting to control second home developments by means of a land use act pertaining to subdivision development within the state. Senate Bill 35 requires the planning commission in each of the 63 counties in Colorado to develop, and the county commissioners to adopt and enforce, subdivision regulations for all land within the unincorporated areas of the county by September 1, 1972. Failure to do so automatically means that the state's "model" regulations will go into effect in the county in question. In addition, before a subdivision is approved, the developer must prove that the water supply will be adequate for the planned population. State officials fear, however, that the bill's vague phrasing may make enforcement difficult. Furthermore, the bill's 35-acre minimum provision may not prevent further land division within the state.

In contrast to the second home developments which have virtually ignored environmental factors, Sea Pines Plantation which is located on the southern tip of Hilton Head Island, South Carolina, has a combination of careful planning techniques and rigid developmental standards. A series of land covenants control the residential areas of Sea Pines.

The company prepared the covenants as an attempt to protect the community against the development of any conditions which would mar the attractiveness of the various neighborhoods within the project.[39]

Residential homesites are deeded to individual buyers subject to complete deed restrictions. An Architectural Review Committee encourages the construction of homes which are well designed, compatible in size to neighboring homes, and appropriate for a coastal environment. Materials and exterior color schemes also come under the purview of the Committee and must contribute to creating an attractive and harmonious neighborhood. If the Architectural Review Committee so recommends, the Sea Pines Company can block the construction of a home on purely aesthetic values. The Company has a thirty-day right of first refusal to purchase any property offered for sale in the Plantation for the purchase price at which the owner is willing to sell to another buyer. Also, in order to discourage land speculation, contracts for the sale of beach and waterfront property include the provision that if the owner has not built within ten years, the Company has the right to repurchase the property at the original selling price.

The greatest natural amenity at Sea Pines is the Atlantic Ocean. Although homes are built a short distance from the shore, so few trees were destroyed in the construction process that people utilizing the beaches tend to be unaware that the residential developments are so near. The Sea Pines Company has developed four golf courses on its property. Other available recreational activities include sailing, fishing, horseback riding, and tennis.

Sea Pines also offers visitors such opportunities as ecological studies. A couple or family may have a lecture and a short field trip included in a regular weekend package at the Hilton Head Inn. Conferences and meetings on such topics as the Ecology of Land Development, Island Birds, and Pollution are offered. Many of these programs are conducted in the Sea Pines Forest Preserve, a 572-acre wilderness area in the center of the community. Sea Pines has found that by practicing a policy of environmental protection, the quality of the recreational experience is so high that visitors will return many times, resulting in tremendous profit for the Company.

Like all other private recreational developments, Sea Pines caters to members of the upper class. Weekly rates during vacation season run from $140 for an efficiency to $450 for a beach villa. Obviously this is more than the typical family can afford. Hence, although Sea Pines has done an admirable job of environmental protection, it does not provide recreational opportunities for a large segment of the population.

II.F Theme Parks

A segment of the recreation industry which is attracting an increasing number of visitors each year is the theme park, amusement parks which are built around a unifying idea. Currently there are twelve major theme parks in the United States, and at least eight more are in the advanced planning stages (see Table 8). Admission costs range from \$6 - \$8 for adults and \$3 - \$5 for children.

Theme parks are relatively new in this country. The first such park in the United States was Disneyland, which was completed in 1955 on a 65 acre tract of land in Anaheim, California. The number of customers visiting the park increased from 3.8 million during its first year of operation to 6.0 million in 1964 and 9.4 million in 1971. To handle the increasing crowds, Disney boosted investment in the park from an original \$17 million to more than \$50 million by 1964. By the end of 1972, more than \$90 million will have been invested in the facility.[40]

It has been estimated that Disneyland business, in its first ten years of operation, resulted in \$61.3 million in sales within the city of Anaheim.[41] Disneyland transformed Anaheim from a dusty town set among orange groves to a densely populated commercialized region. In 1950, the population of Orange County was slightly over 216,000. Each succeeding year the population increased seven to thirteen percent until 1956, when it jumped thirty-three percent in a single year. During the period from 1950 to 1965, the citrus acreage in the county dropped from a bearing acreage of 62,000 to just under 20,000 acres. The value of property soared from approximately \$3500 an acre in 1950, to between \$15,000 and \$20,000 an acre in 1965.[42] The agricultural economy has virtually disappeared, replaced by motels, restaurants, apartment buildings, a wax museum, and a Japanese village, all of which hope to attract a portion of Disneyland's visitors.

Prompted by his success in California, in 1965 Disney began plans for a new development, Walt Disney World, which is located near Orlando, Florida. Orlando had been a quiet region of citrus groves, cypress-lined lakes, and cattle ranches on land that was not believed to be of any particular value; the specific site chosen by Disney was mainly low-lying swamp. After acquiring the site, Disney officials found that they had to spend \$33 million to make it suitable for construction, a task which required the shifting of 8.5 million cubic yards of earth and elevating the park area by twelve feet.[43]

Billed as a "complete vacationland" and as the "largest non-government building project in the U.S.," Disney World opened its gates in October of 1971, by which time the Disney Corporation had already invested \$400 million in the development. Approximately 100 acres of the 43 square miles

TABLE 8

MAJOR THEME PARKS IN THE UNITED STATES

Existing Parks	Location
Disneyland	Anaheim, California
Walt Disney World	Orlando, Florida
Six Flags Over Texas	Dallas, Texas
Six Flags Over Georgia	Atlanta, Georgia
Six Flags Over Midwest	St. Louis, Missouri
Cedar Point	Sandusky, Ohio
Knott's Berry Farm	Buena Park, California
Magic World	Valencia, California
Astroworld	Houston, Texas
Hershey Park	Hershey, Pennsylvania
Kings Island	Cincinnati, Ohio
Opryland	Nashville, Tennessee

Planned Parks	Location	Completion Date
Carowinds	Raleigh, North Carolina	1973
World of Fun	Kansas City, Missouri	1974
Ringling Circus World	Orlando, Florida	1975
Marriott	Washington, D. C.	1975
Taft Park	Richmond, Virginia	?
Sugartree	Danville, Virginia	?
Atlantis	Virginia Beach, Virginia	?
Sports Center	New Jersey	?

Source: David L. Brown, Vice President in Charge of Theme Parks, Marriott Corporation.

of Disney World property comprise the "Magic Kingdom" or theme park proper. An additional 2500 acres are utilized for recreational facilities and vacation housing. A portion of the remaining 25,000 acres will be used as a buffer zone to discourage peripheral developments.

A 7500-acre tract of land has been set aside as a conservation area; 5000 acres of this is in the Reedy Creek Swamp, "a dense, tangled forestland of virgin cypresses, palms, pines, vines, and orchids, of huge, flapping birds, cranes and turtles, deer and panthers, black bears, and alligators; every wild bird and animal species of inland central Florida lives here, with room to survive and reproduce."[44]

As a result of special laws passed by the Florida State Legislature, Disney World is a separate entity. It provides its own sewage and garbage disposal systems, security force, fire department, and transportation system. Two separate cities are located on the Disney property, and the Corporation has the same powers of eminent domain and taxation as any other city in the United States.[45]

An average of $180 per acre was paid for the land upon which Disney World is located. When Disney Productions made its plans public late in 1965, it started one of the biggest speculative land booms ever to hit the state of Florida. Commercial land in the area soared to a cost of $40,000 an acre. Humble Oil paid $240,000 for two service station sites that amount to less than two acres.[46] CBS News Correspondent Mike Wallace reported that:

> ... hotels plan to build 5000 more rooms in the next year. And even that won't be able to take care of the crowds. Some Disney World visitors have been forced to stay at hotels over sixty miles away. And now the land boom, the building boom threatens the famed orange groves of central Florida. One observer says that he's afraid that in ten years the only orange tree in the county will be in a museum. And as the groves disappear beneath concrete for motels and housing developments, central Florida faces a problem with its water supply, for nine-tenths of the water in Orange County comes from the ground beneath the groves which absorbs the rainwater. And rainwater cannot filter through concrete.[47]

Agricultural lands in prime water recharge areas are being sold to developers at a rapid rate. In late 1971, the Orange County Agriculture Zoning Board turned down 125 requests for agricultural zoning in favor of developments.[48]

Although Florida has a history of overdrainage, Disney World hopes to correct the problem on its own land through a water reclamation plan. Seventeen self-regulating dams permit water levels to be raised and lowered to approximate natural fluctuations. In addition, the Reedy Creek Improvement District, whose boundaries approximate those of the Disney property, has built a protective dike around Disney World. Water draining a 99 square mile area to the north normally drains into Disney World at eleven different points. It is monitored daily and water can be refused if its quality falls below acceptable standards.[49]

Disney developers are apparently not concerned about the water which would empty onto Disney property if the dike had not been built. The increased runoff of water in the Orlando area creates water quality and quantity problems in Lake Okeechobee and the Everglades. In the South Blossom Trail area east of the Disney project, floods have recently occurred. Orange County Commissioners said that the problem is complicated by high water tables.[50]

Disney World has taken a number of unusual steps regarding pollution control within its property. Wet garbage will be ground up and sluiced into the sewage system. Trash, paper cups, tin cans, and bottles will be whisked to incinerators at a central collecting point by underground penumatic tubes from nineteen dumping stations. The effluent from the three-stage activated sludge plant will be chlorinated and clear to the eye, with ninety-seven percent of suspended solids removed. Since nitrates and phosphates in the effluent water could stimulate detrimental algae and weed growth if released into a lake, the water will be used to spray-irrigate golf courses and a projected experimental farm of 600 acres. Some waste water from the sewage plant will be recycled and used to combat air pollution. It will be sprayed onto stack gases emerging from the central incinerator and will wet down fly ash emerging from the furnace. The captured fly ash will then be used in the sewage plant as a flocculent to clarify effluents.

Although Disney World will buy some electric power, it will produce most of its own. Two 8,000-horsepower Canadian jet fighter engines burning low-sulfur natural gas force 1,500-degree heat through turbines driving electric generators. In addition, over half of the waste heat is captured by boilers producing 400-degree water. Energy from the water is employed in a lithium bromide chemical process to chill water for air conditioning systems throughout the park.[51]

Environmentalists concede that much of the engineering is advanced and should be incorporated into the plans and systems of other facilities. However, a number of Disney's innovations are being criticized. The vacuum trash collection system was stopped in January, 1972 because of mechanical failures in the incinerators. James Doyle, deputy health commissioner for the Orange County Health Department, says that the department is making tests of the system regarding possible growth of micro-organisms inside.[52]

Furthermore, the highway system in central Florida is not adequate for the heavy load going into Disney World. Two four-lane highways and one two-lane road carry visitors into the park. On November 27, 1971, a traffic jam blocked traffic for 30 miles. Disney officials closed the gates for the day with a record breaking crowd of 55,000, and turned thousands away.[53]

Apparently Disney officials are so overwhelmed by the success of their operation that they have not stopped to consider the problems they are bringing into the Orlando area. In the next five years, 150 additional service stations will be needed in the area, and the number of restaurants will increase from 54 to approximately 400.[54] Furthermore, thousands of indigent job seekers, lured by rumors and media coverage, have been pouring into central Florida. Because of a local one-year residency requirement for welfare, many of these people are depending on the Salvation Army kitchen for food and temporary lodging. Major Sidney Lunch, head of Orlando's Salvation Army, reports a 360 percent increase in the Salvation Army's Social Welfare Programs in Orange County.[55]

Orange County has had to spend more than $200,000 to improve its traffic courts, and the County Commissioner, Paul Pickett, has stated that a total of approximately $27 million will be needed to handle all the traffic problems created by Disney World. Orlando Mayor Carl Langford estimates that the city will need at least 150 additional policemen during 1972, and the city has earmarked $6 million for a new police station and court building. Florida State Senate President Jerry Thomas claims that it will take years for the state and local governments to realize enough tax benefits from Disney World to offset the expenses and services that will have to be provided immediately.

One realtor states that, "Construction costs in the Orlando area have gone up in the past year at the rate of one percent per month, and the $12,000-$18-000 home is pretty much a thing of the past." The rising cost of living could make life difficult for the many retired people who have settled in central Florida, and spiraling property taxes are beginning to force citrus farmers to sell out to developers.[56]

Although the Disney company has attacked a number of environmental problems, it has not looked at the total environmental (natural and social) impact of its existence. Developers must realize that their projects have an impact on the area in which they are located, as well as on the specific property owned by the Company.

II.G Recommendations

The private sector has a definite role to play in providing recreational opportunities for the public. The Federal government is faced with the task of encouraging such involvement by the private sector, while simultaneously maintaining stringent requirements to minimize environmental damage caused by the provision of recreational opportunities.

There should be coordination between public and private recreation services. A comprehensive study should be made of commercial recreation resources in the community. This survey should determine the adequacy of existing facilities when and where they are needed.

Currently, there are no standards for developers in the United States, and anyone who wants to call himself a developer may do so regardless of his background and qualifications. Perhaps developers may be issued licenses to practice by the state; one of the prerequisites for this license should be completion of rigid environmental study in the county in which the developer will be practicing.

Individuals should be encouraged to develop organizations which will further the environmental health of the community. State and Federal governments could found environmental research institutes which are concerned with the quality of the environment and the education of the people of all ages. Private organizations may be given small grants to encourage them to gather information and publish their results.

Before future recreational developments are given approval by the county governments, their plans should be studied in detail. Future developments should be compact enough that no cars are necessary within the development. If the development is too large (i.e., is not on a walking scale), utilization of buses or trains should be considered. Employee housing must be satisfactory.

Consulting services must be provided to impacted regions, countries, and to developers. A commission for mountain recreation development should be formed by the Federal government, and should have responsibilities and powers similar to the French Mountain Planning Commission. This commission could control recreation development land uses. A recreation development model is needed to: (1) guide new developers, (2) avoid past errors, and (3) advance, under continued research and revision, the state of the art.

Adequate planning and zoning must be provided on the state and county levels. Furthermore, implementation of planning is essential, and zoning regulations must be enforced. (Too many times in the past, adequate planning has been completed, but has not been implemented.)

Obstacles preventing recreational usage of land must be overcome. A possible solution to the developmental cost obstacle is increased government aid to private land owners, perhaps in the form of tax relief. In granting aids, however, it is essential that the government realize that merely providing financial aid for the initial development is not sufficient and eventually leads to many failures. The government should be willing to provide aid for a one to two year period. This aid will help defray initial development costs, as well as provide maintenance funds until the operation has become self-sufficient. The government should make low rate loans available so that second home developers do not have to rely on the advanced sale of single family units in order to meet front-end costs.

In regards to owner liability for accidents, the state or Federal government could relieve the private owner of liability if the land owner is providing public recreation at no charge. State or Federal officials could inspect the land periodically to try to assure that dangerous conditions do not exist.

In the case of vandalism, the public can compensate land owners through an indemnification program. Another possible approach is to charge recreational user fees and/or to require all guests to register before they are permitted to use the land.

Finally, it must be noted that private enterprise seeks to make a profit, and consequently caters to the upper classes. Perhaps discount prices may be offered to certain people (just as many bus companies allow elderly persons to ride at a reduced rate). Perhaps inexpensive transportation can be provided to these private facilities. In short, attempts must be made to make private facilities accessible to all persons.

The environmental damage brought about by the development of private recreational facilities may be partially attributed to the demand placed on the recreation industry by the population at large. Owners tend to provide what the public wants; if the public is willing to accept developments which ignore environmental considerations, then irresponsible land-owners will probably ignore environmental factors in planning recreational usage of their land. However, if the public demands that environmental safeguards are implemented, then the owners will re-evaluate their position, if only as a consequence of resulting financial difficulties.

Ultimately, the economy of the recreation industry and the quality of the recreational experience are inextricably interrelated. Without a desirable environment, manmade or natural, there would be no recreation industry. When a destination area becomes so polluted that it detracts from the quality of the experience, it affects the full spectrum of business in that area.[57] Consequently, the recreation industry is faced with the challenge of warding off an avalanche of recreation-for-profit services which have set their sights on "how much can I make" rather than "by what means will it be accomplished" or "at what costs."

The private sector has an essential role to play in providing recreational opportunities, but must do so in such a way that the environment is harmed as little as possible. Private landowners and developers have a responsibility for the environment of the future. If stewardship is not carried out at an acceptable level, then state and Federal legislation, as well as county regulations, must impose standards which the developers and landowners have failed to assume for themselves. Senator Hugh Scott accurately described the situation when he said, "...land developers hold the key which could unlock a truly beautiful and livable America."[58]

FOOTNOTES

1. ORRRC, *Outdoor Recreation for America* (Washington, D. C.: Government Printing Office, 1962), p. 157.

2. Clodus R. Smith and Lloyd E. Partain, *Rural Recreation for a Profit* (Danville, Illinois: Interstate Printers and Publishers, 1966), introduction.

3. U.S., Department of the Interior, Bureau of Outdoor Recreation, *Selected Outdoor Recreation Statistics* (Washington, D. C.: Government Printing Office, 1971), pp. 42, 50.

4. Harold Meyer and Charles Brightbill list the major characteristics of private recreational enterprises in *Community Recreation* (Englewood Cliffs, New Jersey: Prentice Hall, 1964), pp. 266-277.

5. Marion Clawson and Jack L. Knetsch, *Economics of Outdoor Recreation* (Baltimore, Maryland: Johns Hopkins Press, 1966), pp. 161, 178.

6. Ernest J. Hodges, "Private Enterprise Reacts to Recreation Demands," *Parks and Recreation*, XXIX (January, 1970), 36-38, 56.

7. Fowler, *Obstacles to Use of Forest Lands*, p. 15.

8. The Forest Service estimate is based on providing the following facilities:

Facility	Cost/Unit in Dollars
Pit toilet	\$ 60 - \$ 90
Table with benches	\$ 35 - \$ 75
Fire pit or grill	\$ 25 - \$ 30
Traffic barriers	\$ 50
Signs and miscellaneous	\$ 12
	\$182 - \$257

The \$600 - \$700 estimate includes costs of providing a water system, roads, a parking spur, and other necessary site development expenses.

See Fowler, *Obstacles to Use of Forest Land*, pp. 20-36.

9. Paul Steiger, "Forest Firms Open Woods to the Public, But With Reluctance," *Wall Street Journal*, CLXXII (October 24, 1968), 1.

10. E. E. Kern and L. S. Driscoll, "Marketing of Outdoor Recreational Services in Rural Areas," *Journal of Soil and Water Conservation*, XVI (July-August, 1966), 142.

11. Fowler, *Obstacles to the Use of Forest Land*, p. 19.

12. Steiger, "Forest Firms," p. 1.

13. BOR, Selected Statistics, pp. 43, 48, 50.

14. "Cashing In on Campers," Time, 96 (July 6, 1970), 62.

15. Wilbur LaPage, "Successful Private Campgrounds," U.S. Forest Service Research Paper NE-58, (1967), p. 1.

16. "Cashing in on Campers," p. 62.

17. "Camping Spree in America: It's a Billion Dollar Market," U.S. News and World Report, LXX (May 10, 1971), 30.

18. Bob Behme, "A Crisis in Our Campgrounds," Field and Stream, LXXV (February, 1971), 130-31.

19. BOR, Selected Statistics, pp. 43, 48, 50.

20. "Leisure Boom Gains," U.S. News and World Report, LXXI (April 17, 1972), 44-45.

21. Peter Browning, "Mickey Mouse in the Mountains," Harpers, X (March, 1972), 65-71.

22. Arnold Hano, "The Battle of Mineral King," New York Times Magazine, August 17, 1969, p. 69.

23. Ibid., p. 50.

24. Browning, "Mickey Mouse," p. 70.

25. "The Mineral King Decision," Time, 99 (May 1, 1972).

26. Frank Browning, "Big Sky: Chet Huntley's New Home on the Range," Ramparts, X (April, 1972), 43.

27. ROMCOE, "Review of Big Sky, Montana Environmental Reports," 1971, p. 5.

28. The entire section on French ski resorts is based on a discussion with Walter Lawson, Denver consultant with Charles Gathers and Associates, on August 8, 1972, in Denver, Colorado.

29. U.S., Department of Commerce, Bureau of the Census, Second Homes in the United States (Washington, D. C.: Government Printing Office, 1969), p. 1.

30. John Hammaker, Investigation into Organized Second Home Communities (Georgia: Georgia State University, 1971), p. 2.

31. U.S., Department of Commerce, Second Homes, p. 1.

32. *Ibid.*, p. 1.

33. BOR, *Selected Statistics*, p. 131.

34. Ralph Z. Miller, "Corporation Giants Eye Recreational Land Use," The *National Real Estate Investor*, XI (August, 1969), 4.

35. U.S., Department of the Interior, Bureau of Outdoor Recreation, *Northern New England Vacation Home Study* (Washington, D. C.: Government Printing Office, 1966), p. 6.

36. Wendell Martin, "Remote Land: Development or Exploitation," *Urban Land*, XXX (February, 1970), 4.

37. Alan T. Hill, "Residential-Recreation Development Prevents Soil Erosion," *Civil Engineering*, 41 (December, 1971), 60-64.

38. Morton C. Paulson, "Beware Buyers of Dusty Lots," *National Observer*, June 10, 1972, p. 10.

39. Charles Frazer, "Sea Pines: A Community Designed for Leisure," in *Land: Recreation and Leisure* (Washington, D. C.: Urban Land Institute, 1970), pp. 59-65.

40. "Tinker Bell, Mary Poppins, Cold Cash," *Newsweek*, LXVI (July 12, 1965), 74.

41. "Fantasy That Paid Off," *New York Times Magazine*, June 27, 1965, p. 22.

42. Martin R. Northrup, "The Environmental Impact of Walt Disney World" (unpublished paper, 1972), p. 13.

43. "New Boom: Disneyland East," *Newsweek*, LXXVII (April 19, 1972), 105.

44. Elliott McLeary, "Will 10,000,000 People Ruin All This?", *National Wildlife Federation Magazine*, IX (June/July, 1971), 7.

45. Columbia Broadcasting Company, "Sixty Minutes," IV (June 18, 1972), 2.

46. "New Boom," p. 104.

47 Columbia Broadcasting Company, "Sixty Minutes," p. 3.

48. Northrup, "Impact of Disney World," p. 13.

49. McLeary, "10,000,000 People," p. 8.

50. Northrup, "Impact of Disney World," pp. 3, 7-8.

51. For a complete description of the steps Disney World developers have taken, see McLeary, "10,000,000 People," pp. 9-11.

52. Northrup, "Impact of Disney World," p. 5.

53. "Disney 'Full' Sign Makes Parking Lot of Highway," Orlando Sentinel, November 27, 1971, p. 1.

54. "Preview of the New Biggest Show on Earth," Look, XXXV (April 6, 1971), 28-35.

55. Columbia Broadcasting Company, "Sixty Minutes," pp. 5-6.

56. "New Boom: Disneyland East," p. 104.

57. This idea is the basis for a proposed travel industry environmental summit meeting of economically and politically influential executives to discuss problems threatening the recreation industry.

58. Hugh Scott, Congressional Record, February 9, 1970.

SECTION III
OUTDOOR RECREATION IN COASTAL AREAS

The coastal area is no longer just a place to visit but also a place to live and work. In 1940, 107 million people or 80.9 percent of the total U.S. population lived in the thirty coastal states. By 1970, the coastal population had increased to 173 million or 85.1 percent of the total population. In fact, in 1970, the population of just the coastal counties in these states was 49 percent of the U.S. population.[1]

This concentration of half the U.S. population so near the coast causes severe problems in the coastal environment. This report will be concerned primarily with the problems caused by recreational activities. However, since recreation, industry and resident population are interrelated, coastal zone management policies must be implemented which take all these factors into consideration.

III.A Demand

Recreational demand on coastlines is so high that a 1955 Department of the Interior survey concluded: "Present facilities are already inadequate and will be smothered by increasing attendance unless additional recreation areas are provided." During the seventeen years since this report, conditions have worsened. The overcrowding of facilities on Federal, state and local levels can be illustrated by several examples.

In the twenty year period from 1943 to 1954, the Department of Interior survey found an increase in the use of the New York State public beaches from 5 million to 61 million annual visits.[2] In 1968, the 3.4 mile beach at Coney Island recorded 27 million visits, Rockaway Beach in Queens recorded 21 million visits, and all the New York City beaches combined accommodated nearly 50 million visits.[3]

Coastal states are also experiencing increases in tourists and permanent coastal residents. The number of tourists visiting Florida doubled from 10 to 20 million between 1960 and 1970.[4] In California, 127 million recreation days were spent at the shore in 1970.[5] At Virginia Beach, Virginia, the permanent population grew from 19,984 in 1940 to over 100,000 in 1963 and 172,106 in 1970.[6]

Six national seashores, established by the National Park Service in an attempt to relieve the pressure on local beaches, were visited nine million times in 1970 and well over ten million times in 1971. Point Reyes Seashore in California witnessed an increase in visits in excess of 250,000 from 1970 to 1971.[7] The Bureau of Sports, Fisheries and Wildlife reported a ten percent increase in overall visits to its wildlife refuges. At these areas, boating and swimming rank as the first and second most popular non-wildlife oriented uses.[8]

Most of the demand for coastlines is in the form of one-day outings. The shoreline within a few hours drive of urban areas is used much more heavily than distant national seashores. While Coney Island recorded 27 million visits in 1968, all the National Seashores together received only ten million visits in 1970. On urban coastlines, a peak use effect is evident. Situations such as 70,000 day users at Pismo State Beach, California on July 4, 1968, and less than 4,000 a few days later are common.[9] Demand for coastline recreation is highest on weekends and holidays. Coasts are not vacation destinations as much as they are day-use areas.

It is difficult to obtain a measure of recreational activities in coastal regions. Although the Bureau of Outdoor Recreation compiles statistics on activities, it does not divide them by location. It is certainly true that the coast is a primary area for such activities as picnicking, driving for pleasure and nature walks as well as for such water-oriented activities as swimming, sailing, boating and water skiing. The rise in participation in these activities is an indirect indicator of the increasing demand for coastal recreation. In 1965, swimming was fourth on the Bor's list of most popular activities, with 67.8 million participants over the age of twelve. Participation in swimming increased fifteen percent between 1960 and 1965, while the population increased by only eight percent. In the same time period, participation in water skiing increased by eight percent, motorboating by eighteen percent and sailing by 62 percent. Participants in all these water-based activities totaled 114.4 million in 1965.[10] This increase in participation in water-based recreation has affected coastal areas as well as inland waters.

III.B Supply

The demand for outdoor recreation in the coastal zone is increasing. Is the supply of coastal recreational land sufficient to meet the projected increases in demand? In 1955, only 6.5 percent of the 3,700 miles of shoreline on the Atlantic and Gulf coasts were in Federal and state hands for public use. These 240 miles were comprised of 39 areas in fourteen states; including two national parks, one seashore recreation area, and 30 state seashores. More than one-half of the 240 miles were contained in the Cape Hatteras National Seashore and in Acadia and Everglades National Parks.

The large amount of coastline in private hands is a serious problem in providing coastline recreation. It is estimated that less than one-tenth of one percent of the shoreline of the Chesapeake Bay is available to the public.[11] Private homes inland can obstruct access to a public beach. The problem of public access to beaches through private holdings has become a factor in many areas. At Miami Beach, for example, erosion is proceeding at a tremendous rate as a result of man-made changes along the beach and recent tropical storms. Most of the land adjacent to the beaches is owned by large hotels. The Army Corps of Engineers has proposed a 35 million dollar erosion control plan, of which 60-70 percent would be financed by the Federal Government if public access to the beach were allowed. The hotel owners fear that public access would cause a loss of revenue and therefore oppose the Corps' proposal. The delicate balance of public and private interests hinders an attempt to provide public shoreline recreation.

There are two methods of increasing the supply of coastline recreation. The first is to develop the existing 8,500 acres of public shoreline to accommodate more recreationists and the second is to acquire more miles of coastal property.

Proper development of the now publicly-owned coast could alleviate situations such as the overcrowding of New York City beaches. Table 9 shows that only 3,400 miles of public coast are presently developed for recreation.

TABLE 9

SHORELINE USE (EXCLUDING ALASKA)

Recreation Public	3,400 (09%)
Recreation Private	5,800 (16%)
Non-Recreation Development	5,900 (16%)
Undeveloped	21,800 (59%)

Construction of beach-saving devices, and adjunct facilities such as parking lots, marinas and picnic areas could increase the supply of recreational coast available. However, only 33 percent of the total shoreline has beaches and as much as 75 percent of the beach area may already be developed.[12] The shortage of natural beach areas may cause a reorientation of development to include less ideal locations such as bluff and marsh areas.

More shoreline could be acquired by governmental agencies. A 1936 Department of Interior survey[13] recommended increased acquisition of shoreline. While twelve major strips with 437 miles of beach were planned, only one of the areas was acquired within the next twenty years. The others are now privately owned. The costs of land acquisition have increased tremendously since 1936. Thirty miles of undeveloped land recommended for acquisition in 1935 at a cost of $9,000 a mile would have cost $110,000 a mile to acquire in 1955. Since the Government must pay a tremendous price to increase coastal supply now, intensive screening of proposed areas must be undertaken before purchase.

In 1955, 54 areas with 640 miles of beach were identified as underdeveloped areas suitable for recreational development. These areas comprised seventeen percent of the shoreline from Maine to the Gulf of Mexico. One-third of the suggested area was in Texas; the densely populated section between Massachusetts and Delaware contained 118 miles of the suggested areas.[14] All the areas were within one day's travel of hundreds of thousands of people. In spite of the high costs of shoreline acquisition, over 700 miles of marshes and beaches have been added to Federal seashore recreation areas in the last three years.[15] However, the National Seashores were acquired in scenic areas often far distant from population concentrations.

A comparison of the visitation statistics cited above shows that attendance at the National Seashores is far surpassed by the use of New York City beaches. In recent years, the National Park Service has tried to provide Federal seashore recreation facilities close to urban areas. One example of this change in policy is the proposed Gateway National Recreation Area in New York Harbor. Gateway will be available to city dwellers because of its proximity and links with public transportation systems. This is very important because 35 percent of the households within a two hour travel range from the Gateway sites had incomes under $5,000 in 1960. In New York City alone, 1968 figures indicate 30 percent of the families had incomes of less than $5,000.[16]

Data made available by the Regional Planning Association shows that:

(a) 20.1 million people live within two hours of travel of the proposed park;

(b) This figure of 20.1 compares with the total of 15.2 million persons within two hours of all six of the existing National Seashores: Assateague, Cape Cod, Cape Hatteras, Fire Island, Padre Island and Point Reyes;

(c) The estimated total of 30 million annual visits to the five areas of Gateway, which is probably low, compared favorably with the total of nine million visits to the same six National Seashores;

(d) In 1968, the eight New York City beaches, many of which are overcrowded and polluted, had a total of 48 million visits;

(e) The number of carless households within two hours of Gateway is 1,607,000 or 28 percent of all households in the area, fourteen percent of all carless households in the nation.

The attempt by the National Park Service to bring coastal recreational facilities to urban areas has met with the approval of urban leaders. Although there will be many problems to be solved while Gateway is being developed, its development should be used as a master plan for future areas near other coastal urban centers.

II.C Environmental Impact

All coastal developers must face the special problems of the coastal environment. The coastal ecosystem is very sensitive to man's actions and even in a natural state is highly mobile and subject to change as the result of extensive storms. Waves are the main factor in creating and degrading beaches, although shore processes are extremely complex. When waves hit the shore most of their power is absorbed by the beach but some is responsible for littoral drift which moves parallel to the shore and carries beach material downdrift. The use of jetties and other beach saving devices for recreational as well as other purposes can break up this littoral drift and create problems of severe erosion miles from the jetty. Barrier beaches are often breached by recreational developments, such as access roads, and the effect on the ecology of the coastline can be severe. Barrier beaches often protect a lagoon or marshland which houses a very productive ecological community. Fish spawning patterns can be affected by the breach of the barrier, and the stability of the marsh community can be threatened.

Erosion is a natural phenomenon on the mobile coasts. The awareness of erosion as a problem stems from the desire to keep the coasts static to allow permanent structures as near to the water as possible. But coastal erosion has recently increased tremendously, partly as a result of river flood control measures which reduce the supply of sand to ocean beaches. In 1962, erosion was a serious problem along some areas of coastline in twenty states and a moderate problem in areas of twelve states.[18] The Corps of Engineers has recently conducted a survey on shore erosion. Their national assessment (Table 10) shows that 20,500 miles of coastal area is undergoing significant erosions.

TABLE 10

NATIONAL ASSESSMENT OF SHORE EROSION[19]

Total Shoreline Miles	Significant Erosion	Critical Erosion	Non Critical Erosion	Non Eroding
84,240	20,500	2,700	17,800	63,740

Beach erosion in Florida currently causes the loss of 500 acres of ocean front property yearly. Already 200 miles of the most beautiful beaches have been eroded to such an extent that they can no longer be considered usable recreational areas.[20] On Long Island, losses of from one-half to one acre of beach per mile per year in unprotected areas occurs.[21] Since 1940, according to the Army Corps of Engineers, beaches in the worst of these areas have receded in places by amounts ranging from 70 to 500 feet. The stretch between Fire Island and Jones Beach Inlet is disappearing at the rate of about three and one-half feet a year. One hundred ninety miles of coast in the U.S. is so severely eroded that property and public safety is endangered.[22]

The potential ecological impact of development is tremendous, and unless local governments consider this impact, much harm to the coastline may be done. The Federal Government, using institutionalized impact statements, must be prepared to oversee developments within the coastal region. The Federal government probably must fund much shoreline protection. Along the 2700 miles of coast undergoing the most severe erosion, the Army Corps of Engineers estimates the cost of correction at 1.8 billion dollars.

Problems of industry and other developments besides recreation disrupt this sensitive area and therefore should also come under the control of the Federal government. The entire coastal zone is a single cohesive unit, and it is necessary that all areas of development be regulated together. Unless industrial, commercial, residential and recreational developments are included in overall planning, the results will not be satisfactory. Just as jetties constructed by one community to build up their beaches may erode other beaches, non-recreational developments affect recreation. There is a tremendous concentration of industry in the coastal zones since a labor force, water necessary in power generation and many industrial processes, and access to marine transportation are readily available. The ocean is also a convenient dump for industrial waste. Problems of conflict of interest between recreation and industry are constantly arising.

On Chesapeake Bay a BOR proposed new park site has been supported by the State of Maryland as a pier for the importation of liquid natural gas by The Columbia Gas System. The Calvert Cliffs area has historic and geologic significance but, if the extensive pier required by the gas project is constructed, access to the park will be severely limited. In Delaware Bay, a docking facility for oil super tankers is proposed which would require construction of an artificial island eight miles from shore. This island, as well as the potential oil spills from the tankers, will severely affect the recreational use of the Bay.

The concentration of half the nation's population in or near the coastal counties produces immense amounts of domestic wastes which are often dumped untreated into ocean waters. In 1962, water pollution, mostly from municipal wastes, was a serious problem in some areas of the twelve coastal states and a moderate problem in areas of ten of the states.[23] Two hundred and fifty million gallons of raw human wastes from Baltimore, Richmond and Washington, D.C. flow into the Chesapeake Bay daily.[24] The untreated sewage of most of the city of Honolulu is currently dumped into the Pacific Ocean. In 1970 the Hawaii Department of Health sampled the Waikiki beaches and found excessive pollution.

Chemical and thermal pollution from industry are also problems along the coast. The concentration of population and industry means that coastal pollution is most serious near urban areas where the recreational demand is also highest. As a result, the few beaches that do exist in these areas often open and close on a day-to-day basis because of pollution problems. The need for management of all relevant sectors to reduce these conflicts is evident.

The problems of industry and population in the coastal zone are readily apparent to the public, but recreational activities often cause environmental problems as well. The problems may not be serious when the coastal zone is considered as a whole, but they often disturb the recreational quality of a particular region. Industrial wastes, while they may be more concentrated when first released into the water, are often diluted by the time they reach the recreational areas. Recreational sewage wastes, however, are produced and often released at the recreation site and may have immediate effects. It is important to consider recreational impact on coasts so that the recreational resources may be preserved.

Although little work has been done in the U.S., the Lindsey County Council in Great Britain has produced a study on the ecological implications of countryside recreation.[25] Although the ocean and coastlines are thought of as undamageable resources, this study illustrates their sensitivity even to recreation. Concentrated use frequently occurs on the ecologically fragile dunes and wetland areas near the shoreline. Sand dunes may be naturally either stable or mobile. The stable dunes are protected and stabilized by a vegetative cover which is often destroyed by excessive use. Once this cover is removed, dune building ceases and existing dunes may erode. Mobile dunes are affected even more severely. This erosion often results in a loss of sand from the beach and can cause severe damage to formerly protected areas behind the dunes. In wetland areas, 7500 people per season walking off a concrete path onto a salt marsh can cause complete loss of vegetation cover.

Improper use of motorized vehicles upon beaches causes significant environmental damage. Use of dune buggies, which now number 70,000 to 100,000, has torn away grass vital to sand dune ecology and had a disturbing affect on shore birds. Nesting sites and feeding grounds are destroyed, while noise pollution may affect wildlife beyond the immediate vicinity. Intensive vehicle use on many beaches has brought all the problems of urban life to the shoreline. Certain beaches have virtually been converted into highways through excessive use. During a single weekend in Oceano, California, 287,250 people brought 30,000 vehicles to the dune area creating crowding, traffic problems, and garbage and sanitary problems.[26]

In wetland areas, motor vehicles such as swamp buggies and air boats are causing increasing problems. The noise these vehicles produce, as well as the disruption in vegetation, can have severe effects on the ecosystem and can eliminate other recreational uses of the wetlands.

Discarding unused food and trash often creates serious difficulties. Bird and mammal scavengers, foxes and rats, and various insects are drawn to food scraps, thus upsetting the natural food chain and creating unhealthy conditions in the area. Sanitary facilities such as toilets and washrooms are often insufficient or lacking at recreational sites. At Oceano, only twelve toilets were available for more than a quarter million people. Human waste produces more nitrogen than the shore can tolerate and creates a habitat for disease-carrying organisms.

The rapid growth of boating in enclosed coastal waters has also had significant environmental impact. With approximately 75,000 boats currently operating in Chesapeake Bay, the problems of traffic and exhaust fumes are becoming more serious. Aside from air pollution, the engines generate continuous noise which may be detrimental to wildlife and other outdoor pursuits.

Another problem is that of marine toilet wastes. The use of holding tanks and pumping stations may alleviate the situation, but several problems have to be solved before such methods can be implemented. Secretion from present holding tanks is inevitable, and the chemicals now used to prevent odors and rapid decomposition cause problems when mixed with water disposal systems inland. A possible solution may be the construction of separate facilities to process boating wastes. Certainly more comprehensive planning is needed to solve water-based problems without transferring them to the shore.

The necessary adjunct facilities for recreation cause their own environmental problems. Wetland areas inshore from the beach are often filled in for parking lots and onshore facilities. Roads use tremendous amounts of land and can create severe problems by cutting across barrier beaches. Waste disposal facilities on shore can result in pollution of areas behind the beach itself. The presence of a shoreline recreation resource often affects surrounding development and provokes strips of shopping centers, motels, franchise restaurants, and parking lots which can damage the inland area. Ironically, the most delicate part of the coastal environment, the dunes and the wetlands, are subject to the most damaging uses.

III.D Coastal Planning

Coastal planning must increasingly give attention to the recreational potential and management of the shore. Current beach attendance figures and the coastal population concentration attest to the demand for available facilities. Increasing the supply of usable beach areas is needed where possible, but more environmentally sound management policies are absolutely necessary in existing shoreline areas. Numbers of users and types of use must be balanced with the fragile nature of the shoreline ecosystem. Unless this is done, the existing supply will deteriorate and the quality of experience will decline.

At False Cape, Virginia (south of Virginia Beach), a new recreation facility is planned which may accommodate 25,000 people per hour on hot summer days by the year 2000. In this area, environmental impact studies are being conducted, as well as careful planning, to reduce the amount of concomitant development. Mass transit to the area and the elimination of overnight stays are proposed to relieve potential strain on the wetland area.

The vast amount of shoreline in private holdings has the potential to provide recreational opportunities for a large segment of the American public. Involvement by the private sector relieves pressure on public lands, and, if properly regulated, may provide ecologically sound facilities for beach users. Many states are realizing that the public and private sectors may effectively complement one another--public areas may be used for daytime recreation while private campgrounds may be utilized for overnight stays. In this way, the state may concentrate its efforts on providing and maintaining existing recreational resources.

The State of Maine has created a complete shoreline plan which includes industry and population distribution as well as agriculture and energy supply.[27] All of these sectors are to be combined with recreation in a cycle that will produce little pollution and will have a minimal effect on the environment. As compared with a conventional system (see Figure 9) the proposed cycle provides human necessities without adversely affecting the environment. This simplified scheme involves many difficulties, but does acknowledge the interdependent functions that together create the coastal environment. Coastal management must integrate recreational needs with urban and industrial development. This will hopefully produce a shoreline that can be used by industry and recreators alike with a minimal amount of environmental damage.

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SECTION IV
OUTDOOR RECREATION IN URBAN AREAS

Until recently, most recreation studies have ignored urban recreation. When the Outdoor Recreation Resources Review Commission was established in 1958, Congress dictated that "'Outdoor recreation resources' shall not mean nor include recreation facilities, programs and opportunities usually associated with urban development, such as playgrounds, stadia, golf courses, city parks and zoos."[1] Public and private recreational areas far removed from urban areas have expanded both in size and popularity, but the needs of the central city population have not been adequately met.

Although 70 percent of the visitors to the National Parks are from urban areas,[2] it is apparent that most of these urban park visitors are from suburban areas, not from central cities. Residents of the larger cities (1,000,000 or more) are underrepresented among National Park visitors.[3] Fewer central city residents take weekend or vacation trips than any other group in the country.[4] The poor, non-white elements of the population which are concentrated in the central cities do not have the money and mobility to visit the outlying public and private recreation areas. For central city inhabitants, recreational supply is located within the cities.

IV.A Supply

Recreational supply in urban areas is often discussed as if it included only city parks. It is important to recognize that "park" and "recreational area" are not synonymous terms, though they are usually linked together under one municipal department. Urban recreation can occur in parks, but it also occurs in playgrounds, play lots and other publically developed areas, as well as on streets, sidewalks and stoops. Furthermore, the distinction between outdoor and indoor recreation is tenuous in the city where permanent structures, such as community centers and schools, are used for recreational purposes more often than elsewhere.[5]

IV.A.1 Measurement

The parameters and standards by which the urban recreation supply is currently measured are inadequate. The most common measures are acres in recreation, acres per capita, and number of areas. However, these do not account for types of areas which have different levels of use - a greenbelt and a crowded playground, for example. Because the playground accomodates more people, it supplies more recreation than the greenbelt, although its area may be much smaller. Another frequently used measure is the money invested per capita in recreation. Privately operated facilities and informal recreation are excluded.[6] The discussion that follows is based on these criteria, but their limitations should be borne in mind.[7]

TABLE 11

SUMMARY OF CITY-RELATED INDEX VALUES

	City Recreational Index		City Accessibility Index	
CITY NAME	1965	1970	1965	1970
New York	197	166	0.268	--
Chicago	91	90	0.325	--
Philadelphia	200	216	0.634	--
Houston	149	138	0.173	--
Baltimore	210	264	0.874	--
Dallas	262	266	0.251	--
Washington, D.C.	329	362	1.808	--
Cleveland	275	295	0.905	1.518
San Francisco	291	291	0.099	--
St. Louis	221	233	0.964	--
Phoenix	396	339	--	--
Seattle	282	314	10.838	--
Pittsburgh	228	240	1.571	--
Denver	281	264	3.054	--
Atlanta	253	298	1.446	1.451
Average	244	252	1.658*	--

* Without Seattle, the average is .952.

Source: C. Bisselle, S. Lubore, R. Pikul, National Environmental Indices: Air Quality and Outdoor Recreation, [The MITRE Corp., April 1972], p. 24.

A recent attempt to determine the supply of recreation in various urban areas was made by the MITRE Corporation. Their efforts to develop a city recreation index and a city accessibility index were hampered by many methodological problems, the greatest of which was the lack of a uniform data collection and recording system among cities. The authors reported that areas like traffic islands and median strips were often included by Park and Recreation departments in their determination of the total number of areas under their jurisdiction.[8] In addition, only public recreation facilities under the jurisdiction of city governments were considered, which do not constitute even the total of public recreation facilities available to urban residents. The MITRE study's basic assumptions are also open to some question. The authors assume that if the acreage is the same between two similarly sized cities, the city with the largest number of parks has more, smaller parks which are closer to the people. They state "that more capacity, more money spent and more employees imply better recreation opportunity." And finally, "the chosen measures are of the nature of input parameters; i.e., they indicated what is available but not what satisfaction is derived. The latter is difficult to define, much less to measure."[9] With all its methodological problems, however, the MITRE study remains one of very few attempts to measure the supply of urban recreation.

It is apparent from the MITRE data (shown in Table 11) that the supply of urban recreation varies widely throughout the country. In five of the cities the supply, as measured by the City Recreation Index (CRI), decreased from 1965 to 1970. While limited supply is the rule, there are certain notable exceptions. The City Accessibility Index for Seattle is high because of the Federal recreation areas located within its 50 mile radius. Similarly, the CRI for Washington, D.C. is one of the highest in the country because of its status as a Federal City.

The supply figures from Table 11 can only be interpreted properly in the context of the total recreation supply in the United States. The largest supply of recreational land is located far from urban areas. Only three percent of the public land base and 25 percent of the recreation facilities are located for use during the after-work, after-school hours or for one-day outings. These three time periods represent the peak usage hours.

If only Federal lands are considered, the evidence is even stronger. Nearly all of the Federal land base is inaccessible to disadvantaged Americans. The division of Government holdings by controlling agency and location in Table 4.2 demonstrates that the bulk of public land is located in rural areas.

IV.A.2 Accessibility

Accessibility is not only a problem within the country as a whole, but within urban areas as well. No matter how large the park acreage is per thousand persons, if that

TABLE 12

FEDERALLY OWNED LAND IN THE UNITED STATES BY SELECTED AGENCIES, 1970

	Acreage by Location				
	Total	Urban	% of Total	Rural	% of Total
All Agencies	761,300,913.2	1,555,840.2	0.02	759,745,073.0	99.98
Forest Service	186,888,833.1	1,903.6	0.00	186,886,929.5	100.00
Defense	30,599,503.8	1,429,617.9	4.67	29,169,885.9	95.33
National Park Service	24,400,087.2	37,964.5	0.15	24,362,122.7	99.85

Source: John P. Keith and John P. Milsop, Park Space for Urban America, a submission to the Urban Task Force of the Conservation Foundation Study of the Department of Interior's Second Century, mimeographed, revised February 1972, p. 8.

acreage is located predominantly in the urban fringe areas the parks are usually not accessible to center city residents without cars. In the New York City area, for example, the ocean beaches are the only large public recreational areas accessible by common carrier transportation.

A 1965 study of park need in New York City noted that despite the City's relatively large acreage total (17% of the city's area), 21,500 of the Park Department's 36,000 acres were either under water, in large parks in the urban fringes, or highly seasonal in nature (the ocean beaches). Only 14,500 acres of Park Department land is part of the available supply for recreation. Furthermore, the neighborhoods effectively isolated from recreation opportunities are the ghettoes: Harlem, Chelsea, South Bronx and Bedford Stuyvestant. The lack of recreation areas extends to the commercial and industrial areas of the city where there are few areas for workers or visitors to sit or eat lunch.[10]

IV.A.3 Urban Land Use

Another factor affecting the supply of urban land available for recreational use is the pressure from other urban land uses. A list of landforms suited for open space includes flood prone river valleys, groundwater recharge areas, marshes and swamps, areas of excessive slopes, other areas unsuitable for building, and "unique ecological communities."[11] The bias toward land rejected for other purposes is clear, as well as the tendency for these large areas of open space to be located on the fringe of metropolitan areas rather than in the central cities. Although this aggravates the accessibility problem, it is perhaps understandable from a short-term economic standpoint. Land costs in urban areas have skyrocketed since Central Park was established.

Despite the economic costs connected with the preservation of urban open space, the long-term benefits of urban parks are beginning to be recognized. New planned communities are including open space in their designs. In established urban areas, open space preservation programs have been proposed in connection with land-use planning.

However, the economic pressures for alternative uses of park land are sometimes not withstood. The park director in Atlanta reported in 1969 that 60 percent of the city's park land had been lost in the previous thirty years.[12] Another measure of encroachment is provided in Figure 11, based on 1970 figures, which shows the type of jurisdiction of the acreage lost and the cause of encroachment. Most of the 4500 acres that were lost between 1965 and 1970 were used for public purposes: highways, schools, public buildings and utilities.

There are indications that the availability of vacant land in American cities is not a limiting factor for urban recreational supply. "A study done of the nation's 106 largest cities revealed that, on the average, 20 percent of the land areas of the city is undeveloped and uncommitted land."[13] Generally, areas which could increase the supply of recreational land have not been purchased. The factors which limit expansion of urban recreation supply include high land cost (an economic reflection of other possible land uses) and the cost of developing recreational facilities.[14]

The supply of urban recreation cannot be evaluated by simple measurements. There are inequities in the distribution of public lands within the country as a whole and within individual metropolitan areas. Central cities are consistently on the short end of supply.

IV.B Demand

There are three common measures of the demand for urban recreation: population size, need for recreational facilities (as reflected by residents' desires), and participation figures. Since participation and population are much easier to measure than need and desire, participation has often been equated with demand. The emphasis here will be on measurement of need and desire.

IV.B.1 Characteristics of the Population

The demographic patterns of the United States show that the proportion of Americans living in Standard Metropolitan Statistical Areas has steadily increased in the last half-century, and is expected to increase further. Metropolitan areas contained 66 percent of the nation's population in 1960 and 71 percent in 1970. The percentage of Americans residing in metropolitan areas of over 1,000,000 people has also increased. These "great metropolitan areas" are expected to contain the majority of Americans by 1980.[15]

The population increase in metropolitan areas is caused by growth in the population of the suburbs, not of the central cities. The percentage of the U.S. population living in cities of over 100,000 dropped from 28.3% to 27.6% between 1960 and 1970.[16] Of 25 central cities studied by the NRPA, only fifteen declined in population between 1960 and 1970.[17] These general findings are exemplified by one specific case, New Haven, Connecticut, where the population of the central city decreased 6.8% between 1960 and 1967, while the population of the SMSA increased by 8.2%.[18] The out-migration from the central cities to the suburbs, which partially accounts for these population distribution trends within SMSA's, has been one of the best documented demographic trends in the nation. However, despite the population migrations which have increased the suburban population and reduced the central city population, 29% of all Americans still live in central cities of SMSA's.[19] A California study reports, "One out of every eight Californians lives in an urban impacted area."[20]

The changes in population distribution between the metropolitan areas and the rural areas and within the metropolitan areas have resulted in differing distributions of socio-economic and racial characteristics. The differences are particularly apparent when central city areas are compared with the surrounding urban fringes. The Census data given in Table 13 compares metropolitan/nonmetropolitan and central

TABLE 13

POPULATION DISTRIBUTION BY METROPOLITAN-NONMETROPOLITAN RESIDENCE: 1970 AND 1960

Race and Residence	1970		1960		Change, 1960-1970	
	Number	Percent distribution	Number	Percent distribution	Number	Percent
ALL RACES						
United States	202,534	100.0	178,677	100.0	23,857	13.4
Metropolitan areas.	131,519	64.9	112,367	62.9	19,152	17.0
Inside central cities . . .	58,635	29.0	57,785	32.3	850	1.5
Outside central cities. . .	72,883	36.0	54,582	30.5	18,301	33.5
Nonmetropolitan areas	71,015	35.1	66,310	37.1	4,705	7.1
WHITE						
United States	177,429	100.0	158,698	100.0	18,731	11.8
Metropolitan areas.	113,628	64.0	99,431	62.7	14,197	14.3
Inside central cities . . .	45,088	25.4	47,638	30.0	-2,550	-5.4
Outside central cities. . .	68,539	38.6	51,793	32.6	16,746	32.3
Nonmetropolitan areas	63,802	36.0	59,267	37.3	4,535	7.7
NEGRO						
United States	22,807	100.0	18,391	100.0	4,416	24.0
Metropolitan areas.	16,122	70.7	11,910	64.8	4,212	35.4
Inside central cities . . .	12,587	55.2	9,480	51.5	3,107	32.8
Outside central cities. . .	3,536	15.5	2,430	13.2	1,106	45.5
Nonmetropolitan areas	6,685	29.3	6,481	35.2	204	3.1

Source: U.S., Bureau of the Census, Current Population Reports, Series P-23, No. 37, "Social and Economic Characteristics of the Population in Metropolitan and Non-Metropolitan Areas: 1970 and 1960," [Washington, D.C.: Government Printing Office, 1971], p. 1.

city/suburban area racial characteristics. Significantly, the percentage of the white population living in central cities declined 5.4 percent between 1960 and 1970, while the percentage of the black population in central cities increased by 32.8 percent.

The Census Bureau's data on differing income levels between metropolitan and non-metropolitan areas is given in Tables 14 and 15. The disparity of incomes between the central city and the suburbs is evident from these figures. The Census figures also give the percentage of the population below the poverty level.[21] While 6.3 percent of the metropolitan residents outside the central city were below poverty level in 1969, 13.4 percent of the metropolitan residents within the central city were in poverty.[22] The percentage of elderly (over 65) seems to be higher in central cities than in other areas.[23] Perhaps the dominant population characteristics of central city residents can be summed up in Burch and Shelstad's words which refer specifically to New Haven, but seem more generally applicable: "All of these indicators suggest that the central city is now largely inhabited by the poor, the old, the black, single individuals and young couples with no children or infant children."[24] These changes mean that public recreational facilities in the cities are a more crucial need than ever, since these groups are least able to afford private recreation.

IV.B.2 Participation Data and Need

Participation data for most urban recreation systems is scant. Federal surveys measure participation in various activities but make no breakdown as to location. Except in a few cases, municipal information on park attendance is nonexistent. In fact, many officials agree that usage figures are impossible to obtain for most city parks.[25] However, a combination of information from various sources can give an approximation of participation in urban recreation. This participation information can be interpreted in two ways: 1) showing whether metropolitan residents participate in different activities than American residents generally and 2) whether metropolitan recreation areas are used for different purposes than recreation areas as a whole.

Urban residents comprise the majority of U.S. residents, and can thus naturally be expected to be the majority of all recreation participants. In the sample survey conducted by the BOR in 1965, 64.7% of the respondents lived in SMSA's and 35.3% lived outside of SMSA's. Percentages of the participants in selected activities who resided in and outside of SMSA's are given in Table 16. Metropolitan residents participate more than their percentage of the total sample in outdoor games and sports, golf, tennis, canoeing, sailing, boating, swimming, water skiing, walking for pleasure, nature walking, attending concerts and plays, ice skating, snow skiing and sledding. They participate less than their population percentage in hunting, sightseeing, fishing and horseback riding. In the other activities, metropolitan residents

TABLE 14

NONMETROPOLITAN RESIDENCE: 1970 AND 1960

[In 1969 dollars. Number of families in thousands. Families as of March 1970 and April 1960]

Income Characteristics	1969				1959			
	Metropolitan areas			Non-metro-politan areas	Metropolitan areas			Non-metro-politan areas
	Total	Inside central cities	Outside central cities		Total	Inside central cities	Outside central cities	
ALL RACES								
All Families.	33,150	14,704	18,446	18,089	28,584	14,715	13,869	16,420
Average size of family. .	3.6	3.5	3.7	3.6	3.6	3.5	3.7	3.7
Median income	$10,261	$9,157	$11,003	$7,982	$7,880	$7,417	$8,351	$5,647
Mean income	11,506	10,450	12,348	8,872	9,202	8,634	9,806	6,488
Income per family member.	3,183	2,989	3,328	2,448	2,559	2,467	2,651	1,734
WHITE								
All Families.	29,335	11,759	17,576	16,689	25,764	12,447	13,317	15,067
Average size of family. .	3.5	3.3	3.7	3.5	3.5	3.4	3.7	3.6
Median income	$10,646	$9,797	$11,155	$8,312	$8,198	$7,881	$8,486	$5,976
Mean income	11,958	11,124	12,516	9,185	9,594	9,172	9,988	6,808
Income per family member.	3,380	3,329	3,412	2,599	2,709	2,691	2,725	1,865
NEGRO								
All Families.	3,466	2,740	726	1,308	2,606	2,126	480	1,257
Average size of family. .	4.2	4.1	4.4	4.7	4.1	4.0	4.5	4.7
Median income	$6,836	$6,794	$6,986	$3,969	$4,768	$4,840	$4,383	$2,152
Mean income	7,725	7,575	8,291	4,972	5,340	5,399	5,077	2,787
Income per family member.	1,847	1,841	1,866	1,066	1,309	1,354	1,131	589
NEGRO AS % OF WHITE								
Median income	64.2	69.3	62.6	47.8	58.2	61.4	51.6	36.0
Mean income	64.6	68.1	66.2	54.1	55.7	58.9	50.8	40.9
Income per family member.	54.6	55.3	54.7	41.0	48.3	50.3	41.5	31.6

Source: U.S., Bureau of the Census, Current Population Reports, Series P-23, No. 37, "Social and Economic Characteristics of the Population in Metropolitan and Non-Metropolitan Areas: 1970 and 1960," [Washington, D.C.: Government Printing Office, 1971].

TABLE 15

CENSUS DISTRIBUTION OF FAMILY INCOME - BY PERCENTAGE

1969 Income	Total	Metropolitan Total	Inside Central City	Outside Central City	Non-Metropolitan
Under $3,000	9.3	7.0	9.40	4.80	13.70
$ 3,000 - 6,000	16.6	14.2	17.7	11.2	21.1
$ 6,000 - 8,000	13.7	12.7	14.5	11.3	15.5
$ 8,000 - 10,000	14.4	14.3	14.2	14.3	14.7
$10,000 - 15,000	26.7	28.8	25.4	31.5	22.9
$15,000 - 25,000	15.6	18.5	15.2	21.1	10.4
$25,000+	3.6	4.8	3.7	5.6	1.8
Total	100	100	100	100	100
1959 Income					
Under $3,000	16.4	11.1	12.9	8.9	25.8
$ 3,000 - 6,000	22.7	20.0	22.7	17.3	27.6
$ 6,000 - 8,000	19.6	20.1	19.7	20.5	18.6
$ 8,000 - 10,000	14.3	15.9	15.2	16.6	11.6
$10,000 - 15,000	18.2	21.9	19.7	24.2	11.7
$15,000 - 25,000	6.7	8.3	7.6	9.2	3.6
$25,000+	2.2	2.8	2.2	3.4	1.2
Total	100	100	100	100	100

Source: U.S., Bureau of the Census, Current Population Reports, Series P-23, No. 37, "Social and Economic Characteristics of the Population in Metropolitan and Non-Metropolitan Areas: 1970 and 1960," [Washington, D.C.: Government Printing Office, 1971], pp. 3, 37.

TABLE 16

PARTICIPATION IN OUTDOOR RECREATION ACTIVITIES BY PLACE OF RESIDENCE - 1965

Activity	% of Participants in SMSA	% of Participants in Non-SMSA
Total Sample	64.71	35.28
Bicycling	67	33
Horseback Riding	58	42
Outdoor Games and Sports	71	29
Golf	75	25
Tennis	77	23
Fishing	60	40
Canoeing	77	23
Sailing	84	16
Boating [all other]	68	32
Swimming	70	30
Water Skiing	68	32
Camping	63	37
Hiking	64	36
Walking for Pleasure	70	30
Birdwatching	66	34
Photography	65	35
Nature Walking	70	30
Picnicking	66	34
Driving for Pleasure	67	33
Sightseeing	52	43
Attending sports events	67	33
Attending concerts and plays	73	27
Hunting	48	52
Ice Skating	70	30
Snow Skiing	69	31
Sledding	68	32

Source: U.S., Department of Interior, Bureau of Outdoor Recreation, *The 1965 Survey of Outdoor Recreation Activities* [Washington, D.C.: Government Printing Office], pp. 12-45, 52.

participate in a percentage similar to their proportion of the population.

The distribution of outdoor recreation participants within a metropolitan area can be estimated by using the income distribution data provided by the BOR. Column 1 of the following chart gives the income distribution for the total BOR sample. A comparison of this data with the census data given in columns 2 and 3 indicates that the BOR sample was heavily biased toward low income ranges. This bias must be borne in mind throughout the following discussion.

The table gives the income distributions of participants in the activities metropolitan residents selectively preferred. When compared to the distribution of the sample, it is clear that families in the lowest income range have a very low participation rate in any of these activities (the sole exception being walking for pleasure). Families in middle income ranges ($8,000 - $15,000) have more participants in these activities than their percentage of the total sample. Many of the activities depend on acquisition of personal equipment and skills and some (canoeing, boating, sailing, water and snow skiing) require travel away from the metropolitan area. Families in this middle income range can generally afford these pursuits while those in the lower ranges cannot. Activities such as outdoor games, swimming, and walking for pleasure have an income distribution which resembles the income distribution of the sample much more nearly.

The figures support the idea that accessibility and equipment prices are deterrents to the participation by low income citizens in many outdoor activities. These citizens participate in activities that are available close to home with a minimum of equipment and training. The poor urban population does not participate in recreation as much as other groups in the country.

It is clear that metropolitan park and recreation areas are used for significantly different purposes than park and recreation areas in general. Use by adults tends to be more passive (sitting and walking) while children use the more highly developed facilities of playgrounds.[26]

Generally, urban areas and facilities are used more intensively than non-urban facilities. At the Senate Hearings for the proposed Gateway National Recreation Area in New York, Mayor John Lindsay observed:

> We are hundreds of miles from the nearest national park. As a result, the citizens of the New York region constantly use our 700 parks and 18 miles of beachfront. They welcome more than 17 million visitors a year, many of whom join them at local beaches and pools. In fact, Coney Island, the most heavily used beach in the city, attracts more people in one summer weekend than does Cape Cod in an entire year. . . . Four thousand people to an acre of beach - five times the figure recommended by the Bureau of Outdoor Recreation.[27]

Income	BOR Sample Income Distribution 1965	Census Bureau-Income Distribution of Total Metropolitan Sample 1969	Census Bureau-Income Distribution of Total Central City Sample 1969	Outdoor Games and Sports	Golf	Tennis	Canoeing	Sailing	Swimming	Walking for Pleasure	Nature Walking	Attending Concerts and Plays	Ice Skating
Below $3,000	19.03	7.0	9.40	9	3	5	3	2	8	24	7	7	7
3,000-6,000	28.79	14.20	17.70	27	17	21	24	12	27	27	26	25	22
6,000-8,000	18.03	12.70	14.50	20	19	17	23	17	21	19	20	20	20
8,000-10,000	10.03	14.30	14.20	14	14	14	13	17	13	12	16	14	15
10,000-15,000	14.12	28.80	25.40	9	28	24	21	26	19	17	18	19	23
15,000-25,000	4.33	18.50	15.20	6	10	11	11	13	6	6	8	9	7
25,000+	1.34	4.8	3.70	2	6	3	1	7	2	1	1	2	2
Other	4.30	--	--	3	3	5	4	6	4	4	4	4	4

Sources: U.S., Department of Interior, Bureau of Outdoor Recreation, The 1965 Survey of Outdoor Recreation Activities [Washington, D.C.: Government Printing Office], pp. 12-45, 52.

U.S., Bureau of the Census, Current Population Reports, Series P-23, No. 37, "Social and Economic Characteristics of the Population in Metropolitan and Non-Metropolitan Areas: 1970 and 1960," [Washington, D.C.: Government Printing Office, 1971], p. 37.

The argument that urban recreation areas should be used more intensively than other recreation areas is reasonable. Urban facilities normally do not contain the natural elements associated with the National Parks and forests. In most cases public urban recreation areas do not have provision for camping and wilderness experiences. Those who have neither the money nor the mobility to travel to scenic areas cannot find comparable attractions on mass transportation lines. By encouraging the intensive use of urban parks and recreation areas, more people can be accomodated in a different type of experience than is found elsewhere.[28]

Some studies have been done of the leisure participation of various subgroups which are concentrated within central city areas (the poor, the non-white and the elderly). In general:

> Participation. . . /In public outdoor recreation/ declines with advancing age, rises with increasing education up to the point of high school graduation, and with increasing income, up to a point well above average income, but declines at the very highest income levels. Participation also rises with increasing amounts of paid vacation.[29]

Samuel Klausner argues that "not simply the manifest rules and physical facilities used, but also the very forms and dramatic contents of recreation are class-related."[30] His statement is borne out by a study investigating racial differences in the use of leisure time.

This study began with the assumption that there were significant differences in racial participation in leisure activities that would remain significant even when other variables, such as income, were held constant. Their conclusion altered the original hypothesis "to show that persons of the same socioeconomic level, regardless of race, exhibit similar leisure use patterns.[31] This finding can be interpreted to mean that observed differences in recreation participation between races can normally be explained by the socio-economic variables of income, education, occupation, and social class.

Some specific studies have been conducted in urban areas to determine the recreation participation of urban residents. The major study to date is one on the urban impacted areas of California. Of all residents, 59% use the local parks and recreation centers and 26% use them more than once a week. This high participation rate contradicts the argument that recreation demand is primarily from upper income suburban residents. However, the most popular leisure activities in the Urban Impacted Area are watching television, reading, sewing, and visiting family and friends. None of these are active, outdoor activities. Most of the leisure needs expressed by the UIA residents were for improved public recreation facilities. (See Table 17)

The California study is unique in that its discussion of need includes information given by inhabitants themselves.

TABLE 17

SELECTED FINDINGS FROM CALIFORNIA URBAN IMPACTED AREAS

Most Popular Leisure Activities	Percent of Residents Participating
Watching television	53%
Reading	28%
Sewing	17%
Visiting family and friends	15%
Going to local park	13%
Going to movies	13%
Swimming	13%
Driving, traveling, sightseeing	11%
Attending church, clubs	11%
Going to beach, lake, mountains	10%
Fishing, hunting	9%
Gardening	9%

Barriers to Participation in a New Activity	Percent of all Barriers
Costs	25%
Inadequate parks	19%
No time	16%
Personal responsibilities	13%
Transportation	13%
Neighborhood problems	8%
Lack of opportunity	4%

Local parks and recreation centers are used by 59% of the residents of urban impacted areas; 26% of the residents use them more than once a week.

Leisure Needs Expressed by Residents	Percent of all Residents
Swimming facilities	12%
More parks	11%
Better park maintenance	8%
Better police protection	5%
Community center for teenagers	4%
Better equipped parks	4%
Activities for teenagers	3%
Activities for younger children	3%
Better transportation	2%

TABLE 17 [continued]

SELECTED FINDINGS FROM CALIFORNIA URBAN IMPACTED AREAS

Leisure Needs Expressed by Residents	Percent of all Residents
Arts, crafts, hobby center	2%
Festivals, musical groups, happenings	2%
Facilities for children	2%

Source: William J. Emrie, Recreation Problems in the Urban Impacted Areas of California, prepared for the League of California Cities, County Supervisors Association of California and the California Department of Parks and Recreation [Sacramento: 1970], pp. 9-12.

Other research into recreation needs of urban residents has not proceeded very far.

Edwin Staley, searching for an analytical tool to help municipal governments determine recreation priorities, has developed a "need index," which measures youth population (5-19), population density, median family income, and the juvenile delinquency rate.[32] His index is a pragmatic formulation of need, but the assumptions on which the index is based are untested by any research:

> 1) There are measurable social characteristics and neighborhood recreation resources which indicated comparative need for recreation and youth services by areas, communities or neighborhoods in an urban setting; 2) all citizens have important basic needs for recreation services, but due to different socio-economic characteristics and interests, they have differing needs for recreation services; 3) priorities in community - subsidized recreation services should go to those experiencing maximum social pressures from density of population, number of youth, low income, and evidences of social disorganization.[33]

Other discussions of recreational need are equally ill-supported. These range from the ORRRC's "In a very practical sense, access to outdoor recreation for the inner city residents is essential not only for his own comfort and well-being but also for the advantages occurring to society from his advancement,"[34] to Robert Everly's somewhat stranger ideas that urban parks satisfy man's territorial instincts by giving apparent security to neighborhoods, and that the presence of natural areas prevents urban dwellers from becoming overly aggressive.[35]

Generally, the need for recreation and open space among urban residents is assumed to be as strong or stronger than the need among the American public generally. However, the information used to support this view is slight. Gerald Vaughn presented a challenge to prove or disprove his hypothesis that "urban-reared families do not feel as great a need for open space as do rural-reared families."[36] The only indication that this might not be true is the high proportion of California UIA residents who used the city parks and wanted better parks. Tools like Staley's are useful for making municipal policy, but they have not been supported with hard research.

Even for special groups, recreational research has been slight. The one area which has been explored is children's play, but even here, work has been of poor quality and not truly scientific. This is a significant admission since play research could be immediately relevant to designers of playgrounds and play equipment. Michael Ellis, a leading researcher in the field of children's play, has developed a theory of play based on experimental evidence. Namely, a child will usually seek arousal in playing and try to increase the number of sense stimuli received up to a certain optimum level.[37] Some of Ellis's experiments have demonstrated that more complex play apparatus is preferred in the experimental situation.[38] In playground management, Ellis would replace static play equipment with movable, flexible equipment adapted for a wide variety of uses, which could be manipulated by the children themselves. Despite his work, however, the traditional theories still appear in the literature - and in the playgrounds. Ellis' formulation of the need for play has yet to be incorporated into general practice.

The influence of an intuitive view of children's recreation needs can be seen in the Kirschner report of 1970, after the Recreation Support Program of the summer of 1970. In this research, "community influentials" were contacted for their views of the recreational needs of disadvantaged children. It is important to examine this information, since it is the opinions of "community influentials" that determine recreation programming more than scientific research or participation data. Those interviewed felt that the disadvantaged youngsters needed earlier exposure to competitive sports, "more space; more parks and, in general, more recreational services." They felt that special emotional needs of the children could also be met through recreation, including needs for "love and companionship; a sense of belonging; a need to experience success; and a male model with whom they /could/ identify."[39]

Another special group that is concentrated in urban areas is the poor. Here again both participation data and need research is minimal. Of the residents of the California Urban Impacted Area, 40 percent have incomes below $4,000 a year. These people felt that swimming facilities, more parks and improved parks were their major needs. When such resident surveys are not conducted, however, discussion of the recreational needs of the poor has been confined to the problem of accessibility. The California study reported that:

> . . . almost half of the residents in these areas are limited to the leisure activities which they can do within walking distance of home. The cost of public transportation precludes travelling to a recreation site, at least for those with gross family incomes of less than $4,000 per year.[40]

A major argument used in support of the Gateway proposal in New York was the number of carless households that would be served.[41] But public transportation is not always the answer. Unless fares are subsidized, the round-trip cost to Gateway from Manhattan will be $1.40, and use of the ferry system connecting the three areas of the Recreation Area will raise the cost still further.[42] Poor people's most urgent need is recreation facilities within walking distance, or subsidized travel to outlying areas.

Very little research has been done on the needs of the elderly, who tend to form a greater percentage of residents of cities than they do elsewhere. Paul Friedberg suggests that observation of current activity patterns of the elderly will indicate that there is a need to provide places for them to congregate within normal city patterns. He also suggests providing job opportunities for the elderly to work in recreation services.[43]

In another area of neglected research, Friedberg suggests that recreation planning for teenagers should move away from the "one-dimensional basketball, baseball fields" and provide for the adolescent's need for room and privacy.[44] He and others have pointed out that a great deal of recreational planning is directed toward the teenage boy but very little toward the teenage girl.

This discussion of demand suggests that needs and desires are best determined by observing and asking the people involved, rather than relying on the testimony of "community influentials." The former has been done very rarely, and even more rarely has it been done in a scientific fashion. The results of the research presented here indicate that need and demand cannot always be measured by participation.

IV.B.3 Problems of Interpreting Supply and Demand

The inadequacies of measurement of supply and demand of urban recreation lead one to wonder if urban recreation systems can handle the recreational needs of all their citizens. Has the supply of urban recreation been sufficient to meet the demand? Most sources say no. The Kerner Commission's report on the riots of the summer of 1967 listed inadequate recreational facilities as the fifth most important contributing factor.[45] The situation has not improved much since 1967. A report from the National League of Cities in 1968 states that "Despite extensive acreage, the simple fact remains that in all major cities large numbers of inhabitants do not have access to public recreation facilities because the parks are not where the people are."[46]

The reasons that urban recreation systems do not meet the demands and needs of urban residents are varied. The most important, however, may be the interpretations of "demand" and "supply" accepted by the administrators of park and recreation programs at all levels; "demand" is interpreted to mean participation, and "supply" is interpreted to mean land and facilities. These two factors have resulted in obsolescent park layouts, and underuse of many existing city parks - while the needs for recreation are still not met.

Many municipal parks and recreation departments and even the Bureau of Outdoor Recreation, interpret demand solely on the basis of participation figures. The greater levels of participation in outdoor recreation among those of higher incomes is interpreted to mean that the demand for outdoor recreation is greater among these groups - not that the supply of recreation facilities is less for low income, poorly educated citizens. Since, by this definition, demand is greater in white, middle-class, middle-income areas, additional facilities are provided for these groups.[47] A simplistic example would contrast two neighborhoods: A, white, middle income, which has two public swimming pools and B, predominantly black in an urban impacted area which has none. Not surprisingly, participation in swimming is much higher in Area A than in Area B. Funds for a new swimming pool are spent in Area A where the "demand" is greater.

Part of the demand problem relates to the lack of research into recreational need which was discussed earlier. True demand must include a component of need as well as participation, but too often urban residents are not asked about their desires or participation. Urban populations are seen as homogeneous, and many city officials believe that recreational needs are the same for all segments of the city.[48] This is really a dual problem involving both a lack of community participation in park and recreation decision making and a disparity between recreation planners and their clientele.

Most studies about urban recreation echo the National League of Cities report which called for greater citizen participation in park and recreation planning.[49] There is disagreement on where the impetus for new facilities should begin, how much should be done by the community alone, and what the optimal relations between community, government, and professional consultants are. However, most observers feel that community involvement is not assuming its proper role.[50] Although the Model Cities program of HUD has institutionalized community participation on the Federal level, this program has not led to greater community action in local recreation programs.[51]

A related problem is the disparity between recreation planners and their clients in central cities. The city park still bears the marks of the grand scale of space and design, popularized by the Olmsted school of landscape architecture. City parks are not consciously designed to meet the needs of lower-class urban residents. Urban residents specifically objected to recreation planning which did not meet their needs in Baltimore, where recreation money was used to build a stadium and construct golf courses, and Chicago, whose Lake Front Development Plan included marinas and horseback riding.[52]

One of the causes for the disparity between recreation planners and urban residents seems to be that recreation programs are directed at the middle class and staffed by the middle class.[53] Klausner puts the matter bluntly:

> Outdoor recreation personnel are drawn from a narrow band within the middle class of our society. The policy-making, operating, and research personnel are almost entirely white, of English or Western European descent, disproportionately from rural backgrounds and adherents of a physically active life style. They have tended to project an image of outdoor recreation (created in their own milieu) upon the whole of the society.[54]

Few Americans have traditionally urban backgrounds, so urban recreation preferences probably have not been established. It may be that urban residents do not need open space expanses similar to those planned by Olmsted.[55] Whether or not city park systems designed and maintained by people with a middle-class, rural background really serve the needs of a largely lower class urban population is questionable.

The lack of knowledge and communication of urban recreation needs and the common interpretation of demand as participation could be corrected. A recent theory in the economics of outdoor recreation seems to provide a truer picture of the relation between supply and demand. The opportunity theory, if it is implemented, may alleviate the current situation. Basically, the theory states that participation in outdoor recreation depends on the opportunities available for participation (supply) and not necessarily on demand in the economic sense, or on need.[56]

Lindsay and Ogle tested the opportunity theory by studying users and non-users of a major recreation area near an urban community. They hypothesized that the higher income and education patterns associated with participation in outdoor recreation might not hold true in this case where accessibility problems were minimized. Their results showed that the difference in income between users and non-users of the recreation area was not significant, but that the difference in education was significant - the users had less education than the non-users. Lindsay and Ogle concluded that probably preference for outdoor recreation was equal among all groups, but that the opportunity structure favored higher income, well educated segments of the population.[57] The opportunity theory, if applied on the municipal level, could result in a more equitable distribution of recreation facilities in our cities.

Supply has been misinterpreted by park and recreation officials to mean facilities and land. Recreation supply, in fact, means much more. It includes operation and maintenance costs, opening and closing hours, provision of police protection, and, most importantly, recreational programming and supervision. Typically, municipal recreation budgets are divided into two sections: capital expenditures, and operation and maintenance. Although capital park expenditures (such as acquisition of land, and construction of permanent facilities) can be financed through a variety of means, including bond issues, the second half of the budget is often sacrificed. There are few Federal funds which provide program money, and none which provide money for operations and maintenance. The massive Land and Water Conservation Fund monies are designated solely for land acquisition and permanent facilities.[58] Equipment, maintenance, and programming is not forthcoming for the new parks and many of the older parks in cities are forced to close facilities when maintenance costs cannot be met. The operations and maintenance problem is acute in many areas of the country.[59]

The problems within the municipal recreation budget are heightened by the fact that recreation is a social service and must compete with education, fire and police protection, and other services for a cut of the municipal budget. Recreation budgets have long been one of the favorite targets for municipal slashing. It is somewhat ironic that now, as the importance of recreation is beginning to be widely recognized, budgets face new threats not only from municipalities, but from the Federal Government's proposed revenue sharing program. According to Dwight Rettle, executive director of the National Recreation and Parks Association, revenue sharing could have a disastrous effect on Federal funding of urban recreation.[60] Recreation is specifically excluded from general revenue sharing, and under special revenue sharing it will have to compete with housing, and other social services for funds.

The misinterpretations of supply and demand result in park systems which are obsolete and underused. Of course, underuse aggravates the problem, since low use statistics can be used to hinder further recreation funding. Present underuse is incompatible with the theory that urban parks should be used more intensively than parks in the countryside. The difficulties can be seen on many levels, from large urban parks, to playgrounds, to vest pocket parks.

A recent study by Malt Associates of Washington attempted to pinpoint the causes for the underutilization of urban parks. It began with the thesis that underutilization was due to crime or fear of crime. Phase I examined studies in several cities which broke crime rates down by places of occurence. All the studies concurred that crime rates in or near parks were much lower than for the cities as an average, and that the vast majority of the crime which did occur in parks was vandalism.

The rest of the Malt report went beyond the original hypothesis to search for an alternative cause for underuse of parks. The press release which accompanied the final report stated some of the major findings and conclusions:

- Almost all the parks scored poorly on apparent security as represented by lighting, communication access and control, visibility and similar factors.
- Physical facilities were inadequate. For example, 49 of the parks /total sample of 64/ had toilet facilities, but most were locked and unusable.
- Facilities were mostly designed for teenage males. Teenage girls have nothing; the elderly have little. There is almost a total lack of innovative opportunities for adults.

> The biggest issue that bothers park users is the deficiencies of physical facilities. One of the least significant issues is crime.

> In short the majority of the parks are aesthetically impotent, sterile, and incapable of giving pleasure to the people who would use them. Parks have not changed much in 100 years. They are underutilized. People who use them feel isolated and lonely. The parks are not serving their purpose.[61]

The importance of the Malt report cannot be overemphasized. It is the first study to attempt to pin down the status and problems of urban parks on a nationwide basis.

It has long been recognized that many playground facilities are inadequate. In her discussion of sidewalks, Jane Jacobs supports unorganized play on streets and sidewalks, attacking "the myth that playgrounds and grass and hired guards or supervisors are innately wholesome for children.[62] The play research of Michael Ellis and others has remained largely unapplied to playground design. Instead, "generally what has been resorted to in designing play settings is a system employing hunch, intuition, and scattered field observation."[63] A case example illustrates the results of this method:

> ...a recent study in a variety of different locations in Philadelphia showed that children visited only once per day and then for only fifteen minutes. Children in the most depressed environment with presumably least opportunities for play and perhaps greatest need showed the same pattern. Further, the study showed that on the average the play apparatus was vacant at least 88% of the peak usage time.[64]

Although the research in children's play is more advanced than in any other area of recreational research, the traditional swing-slide-and-seesaw playground continues to reign in the cities.

The idea of vest-pocket parks became popular about ten years ago. These are 1/3-1/2 acre areas with benches, some trees, and varying additional facilities. City governments built many of these parks, some designed by famous architects, in depressed and commercial areas of large cities. Unfortunately, many of the problems of the larger parks recurred on a small scale in the vest-pocket parks. Often community involvement in the decision to construct the park or in the choice of facilities was minimal. This lack of involvement may be a factor in the nonuse, non-cooperation and vandalism suffered by some of these areas.

Nanine Clay did a study of the so-called mini-parks, and was "constantly struck with how empty /the parks/ were even on warm days and evenings when we expected them to be teeming. There are exceptions, of course, but from a cross country survey, they are indeed underused. . . ."[65] The founder of the Black Students program in Architecture at Columbia University commented on the woes of the vest pocket parks as follows:

> Proposals for improving life in the ghetto should recognize the paramount importance of developing an economic base with the black community under local control. The failure of the vest pocket parks should be carefully studied, in order to avoid the kinds of gimmicky proposals which are not rooted in the needs of the people.[66]

The supply and demand problems of urban recreation systems can be related to the tendency on the part of many urban officials to view metropolitan recreational land as if it were National Park and Forest land. In Paul Friedberg's words:

> For economic reasons alone, apart from other valid reasons, we cannot continue providing recreational resources in the way we have been doing. Our cities are strangling, trying to build more and more public facilities and in the process taking more and more land off the tax rolls. . . .
> The answer is to recognize that our park departments. . .are anachronistic, that our ways of looking at open space in the city are similarly behind the times, that our means of developing existing space and creating new space are unimaginative and that our so-called standards are stultifying.[67]

An intensive recreational land use is required in urban areas. The emphasis on operations and programs needed to provide this intensive use is difficult to achieve with anachronistic park departments.

IV.C Environmental Impact

The urban environment is characterized by unusual concentrations of people, industry, service facilities, and highways. The effects of the urban environment on the people who live, visit or work in it are great. Recreational land is also affected by the urban environment, generally in adverse ways. Conversely, recreation and recreational land affect the physical and psychological environment of the city.

Paul Friedberg describes the psychological impact of urbanization and the futility of traditional recreational approaches:

> ...the urban environment has the power to desensitize the perceptions, cause an unnecessary physical strain, create a lingering disorientation, intensify a growing apathy and lack of involvement, limit the capacity to communicate with others, reduce the ability to learn and develop. The environment batters us so devastatingly that no number of basketball games or picnics or bowling matches can neutralize the impact[68]

The effect of the urban environment on open space land is crucial since open space is the source of most recreational land. Besides the restriction in the quantity of open space because of competing land uses, urban environmental pollution affects the quality of the land as well.[69] Air pollution and soil made salty by snow removal activity can damage city trees. Asphalt and cement help reduce their supplies of air, water and nutrients. City trees are subjected to physical damage from vandals, motorists and maintenance crews. Urban open space is just as susceptible to fire as remote forestland.[70] The urban environment affects recreation in a more direct way when urban air pollution makes outdoor activity unsafe. Urban water pollution in rivers denies use of a tremendous recreational resource. Recreation areas two blocks away from a residential neighborhood can be inaccessible if there are major freeways between them.

The effects of the urban environment on recreation seem to be mostly detrimental. The effects of recreation and recreational land on the urban environment are more difficult to determine. The dichotomy between recreational land and open space is significant here. Some recreational lands (playgrounds, community centers) have no more effect on the urban microclimate than a typical building. These areas render the ground impervious just as effectively as a parking lot, and are of no positive help in controlling air pollution.

Green space, however, can have significant effects on the physical environment of the city. Although the effects of trees on some air pollutants, notably carbon dioxide, have been overrated, it seems clear that some air pollutants are absorbed by vegetation. Vegetation seems to have positive effects on the particulate count, the SO_2 level and the ozone content - all pollutants associated with urban industry and power generation.[71]

There is also evidence that green space acts in reducing noise levels. Experiments have been conducted on sound propagation in forests, and recently the effects of shelterbelts on highway noise has been explored. It appears that small groves of trees can cut sound levels by 8db per 1000 feet which "may make the difference between unpleasant street noise and relatively pleasant urban living."[72] Green space also acts to ameliorate the urban microclimate. Temperature differences between city and country are accentuated during the summer months, particularly during the early evening. When the sun goes down the countryside cools off, but city buildings retain their heat. This temperature difference is due to the heat island effect, generated by the concentration of heat absorbing building materials, a polluted atmosphere, and heat from combustion and metabolic processes.[73] Green space can make the heat island effect less intense and cool the city.

Urban vegetation can have a significant effect in controlling water pollution. It is commonly observed that cities tend to have more precipitation than the country because of the high particulate count in the atmosphere and the action of buildings as condensing foci. This precipitation cannot infiltrate into the ground because of the vast amount of impervious area in a city. As a result, the storm sewage system becomes overloaded, and the "lag time" between the time of precipitation and the time the runoff reaches the river is shortened tremendously. The end result can be massive flooding. Urbanization of watershed areas (i.e., loss of vegetation) coupled with severe rains, is considered to be the cause of the recent California mudslides. If grassy and vegetated areas were restored to the city, rain would be able to infiltrate into the ground. If floodplains were zoned as open space, any floods that occurred would not cause tremendous destruction.[74]

The effects of well-placed green space on the urban environment are important, but these are not necessarily recreational impacts. The major recreational impact is on the psychological environment of the residents of the city, and here the lack of hard research is evident.

One effect of recreation and recreational land on the psychology of urban residents is the need for a semblance of spaciousness. Gerald Vaughn suggests that the provision of open space and recreational land in cluster developments and new towns "could reduce the potential demand for outlying recreation areas, regional parks and 'breathing room' in general."[75] Perhaps incorporation of open space plans in older cities could have this effect.

One of the mental effects of recreation, often used as a justification for funding recreation programs, is the theory that recreation is a palliative which can reduce anti-social behavior. Many summer recreation programs began in 1968, after the 1967 riots and the Kerner Commission report. The Recreation Support Program and others assumed that recreational programming would "cool down" the ghettoes in the summer.

It is unlikely that increased recreational programming will immediately reduce juvenile delinquency and misbehavior. Although personality may be correlated with the type of recreational activity preferred, a change in recreation will not produce a change in personality type.[76] Experience with outdoor nature programs for urban children confirms that "there is little indication that outdoor education experiences have much carry over to the other dimensions of life."[77] It is clear that recreation and physical health are positively correlated. But much research is needed to justify or replace the simplistic "constructive use of leisure time" approach which has dominated discussions of recreation and mental health.

IV.D Recommendations

There are several recourses that would alleviate the present situation in urban recreation. The most important, of course, is the necessary research into the need for recreation by various groups and the impact of recreation on the psychological environment of the city. However, some action must be taken to correct inequities of the recreation situation before research can be completed. A first goal would be to equally distribute recreation opportunities within cities. This could be accomplished by acquiring small parcels of land and acquiring leases or easements on land which is temporarily vacant. Flexibility of playground and park equipment would make it possible for municipal park and recreation departments to take advantage of the changing configuration of open space in the central city. At present, acquisition of land within the central city should have a higher priority than land acquisition in other parts of the metropolitan areas. Similarly, when funds for intensely developed recreation areas must compete with park land or open space, the intense recreation plans should be favored. Federal money should be available for year round operation, maintenance and program costs. Federal development of areas like Gateway in New York should be encouraged.

In recreation areas, an increase in supervision and programs offered will increase use of presently underused parks. While no statistics are available, the use of Central Park seems to have increased since the recent restaurants, special events, and nighttime plays and concerts were introduced.

Natural areas within a city should be maintained for the positive effect these areas have on the urban climate and pollution control. Also, natural areas can help form a sense of "place" among urban residents. The virgin ecosystem, which every city has invaded, exists in remnants in some city parks, in small marshes and meadows and on the riverfronts. These small areas, if developed properly, can form elements of a city's identity and serve educational as well as recreational purposes.

Once research has been conducted, the techniques for implementing the findings on a municipal level must be improved. Neighborhoods and community action groups must play a more significant role in recreational planning and decision making.

The problems of the urban environment are interrelated and it is difficult for ghetto residents to separate recreational problems from the myriad of others confronting them daily. It is clear, however, that recreation has a positive effect on the physical and mental environment of city dwellers. By providing adequate recreational facilities within central cities, the inequities of recreational land distribution in the United States can be alleviated. If recreational land can make the cities more livable, some of the pressure will be alleviated in the other recreational lands in the country.

FOOTNOTES

1. C. Biselle, S. Lubore, R. Pikul, National Environmental Indices: Air Quality and Outdoor Recreation (The MITRE Corp., April 1972), p. 131.

2. An urban resident is defined by the Census Bureau as a resident of a community of 2,500 or more. A Standard Metropolitan Statistical Area is "a county or group of contiguous counties which contains at least one city of 50,000 inhabitants or more, or twin cities with a combined population of at least 50,000 . . . . contiguous counties are included in an SMSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city." For the purposes of this study, the term "urban" will be roughly synonymous with central cities of SMSA's. In this introduction, however, the use of "urban" will mean metropolitan according to the Census Bureau definition. U. S., Bureau of the Census, Current Population Reports, Series P-23, No. 37, "Social and Economic Characteristics of the Population in Metropolitan and Non-Metropolitan Areas: 1970 and 1960," (Washington, D.C.: Government Printing Office, 1971), p. 9.

3.

City Size	Percent of U.S. Population 18 and over	Percent of National Park Visitors 18 and over
Rural	29.1	30.6
2,500-99,000	20.1	25.0
100,000-999,999	20.8	20.2
1,000,000 and over	30.0	24.2

John P. Keith and John P. Milsop, Park Space for Urban America, a submission to the Urban Task Force of the Conservation Foundation Study of the Department of Interior's Second Century, mimeographed, revised February, 1972, p. 8. Source of figures - the National Park Service.

4. Rabel Burdge, Outdoor Recreation Studies: Vacations and Weekends, A.E. and R.S. #65 (University Park, Pa.: Pennsylvania State University, 1967), pp. 8, 18.

5. The problems of indoor vs. outdoor occur with the Bureau of Outdoor Recreation's distribution of money from the Land and Water Conservation Fund and other sources. This money is normally earmarked solely for outdoor purposes. Many speakers at the recent BOR hearings suggested that the Bureau's name be changed to the Bureau of Recreation and that fund allocation cease discriminating against indoor activities.

6. Such groups as the YMCA, YWCA, Boy and Girl Scouts, Athletic Clubs, private day nurseries, to name a few, are all involved in recreation.

7. The use of standards, such as the National Recreation Association's ten acres of municipal park land / thousand persons, has recently come under attack. The NRA standard, for example, would require more park acreage on Manhattan than the total area of the Island. For discussions, see Henry M. Levin, Estimating the Municipal Demand for Public Recreational Land (Washington, D.C.: The Brookings Institution, October 1966, pp. 8-11, and Gerald F. Vaughn, "In Search of Standards for Preserving Open Space," Public Administration Review XXIV (December, 1964), 254-58.

8. The City Recreation Index used as its parameters 1) acres in recreation, 2) number of areas 3) dollars spent on operations and maintenance, 4) number of employees and 5) crime as a deterrent to park use. The City Accessibility Index measured acres, capacity and number of areas in two zones (0-25 and 25-50 miles) surrounding the city. Bisselle, Lubore, and Pikul, National Environmental Indices, pp. 22, 191.

9. Ibid., pp. 127-28.

10. New York City Department of City Planning, Recreation Needs in the City of New York (July 1965), pp. II, 1-4.

11. Marion Clawson, "Open (Uncovered) Space as a New Urban Resource," in H. Perloff, ed., The Quality of the Urban Environment (Baltimore: Resources for the Future, Inc., 1969), pp. 160-61.

12. Joseph Shomon, Open Land for Urban America: Acquisitions, Safekeeping and Use (Baltimore: Johns Hopkins Press, 1971), p. 5.

13. Dwight Rettie, quoted in Committee on Architecture for the Arts and Recreation of the American Institute of Architects, "The American Endless Weekend," (draft, October, 1971), p. 77.

14. Some cities like Philadelphia, had minimum acreage standards for recreation areas. Philadelphia's three acre minimum for playgrounds seems to have effectively prevented the purchase of smaller lots. This standard has been dropped, but the reluctance on the part of city officials to purchase many small areas rather than one large one is probably widespread. Community Council of Greater New York, Urban Parks and Recreation: Challenge of the 1970's (New York: February, 1972), pp. 32-33.

15. Jerome Pickard, "U.S. Metropolitan Growth and Expansion, 1970-2000, with Population Projections," prepared for the Commission on Population Growth and the American Future, draft, (Washington: Urban Land Institute, July, 1971), pp. 1-2. The definition of "metropolitan area" used in this report is slightly different than the Census' SMSA. The ULI

study restores a county definition to New England SMSA's, includes "Proto-metropolitan areas (containing an urbanized area with a total population of at least 50,000)," and merges some adjacent SMSA's into a single metropolitan area.

16. Committee on Architecture for the Arts and Recreation, "The American Endless Weekend," p. 46.

17. Diana Dunn, "1970: Urban Recreation and Park. . . Data Bench Mark Year," Parks and Recreation, VI (February 1971), p. 36.

18. William R. Burch, Jr., and Merlin Shelstad, "Nature, Forests and Urban Children - Some Preliminary Findings," revised version of paper presented to the 1971 National Convention of the Society of American Foresters in Cleveland Ohio, pp. 8-9.

19. U.S., Bureau of Census, Current Population Reports, p. 1.

20. William J. Emrie, Recreation Problems in the Urban Impacted Areas of California, prepared for the League of California Cities, County Supervisors Association of California and the California Department of Parks and Recreation (Sacramento: 1970), p. 3. The study's definition of urban impacted area is "multi-neighborhood portions of our largest cities, which exhibit abnormal concentrations of social maladies."

21. Ibid., p. 10. In 1969, $3,743 for a nonfarm family of four was the income cutoff marking the poverty line.

22. Ibid., p. 76. This compared to a 17.1% poverty level for the non-metropolitan population.

23. Emrie, Recreation Problems, p. 6.

24. Burch and Shelstad, "Nature, Forests and Urban Children," pp. 9-10.

25. Harold Lewis Malt Associates, An Analysis of Public Safety as Related to the Incidence of Crime in Parks and Recreation Areas in Central Cities, Phase I report HUD Contract H-1481, March, 1971, p. 7.

26. Shomon, Open Land for Urban America, p. 95.

27. U. S., Congress, Senate, Committee on Interior and Insular Affairs, Gateway National Recreation Area, Hearings, John Lindsay before the Subcommittee on Parks and Recreation, on S. 1193 and S. 1852, 92d Cong., 1st sess., 1971.

28. The various means for increasing the "carrying capacity" of urban parks include longer hours, more planned programs, better supervision and better maintenance of facilities. Fragile ecosystems are seldom a problem in central cities, and therefore the "carrying capacity" is not limited by physical factors. Most metropolitan recreational land is "typographically 'self-preserving'", *ORRRC Study Report 21: The Future of Outdoor Recreation in Metropolitan Areas of the United States* (Washington, D.C.: Government Printing Office, 1962), p. 3.

29. Clawson, "Open (Uncovered) Space," p. 150.

30. Samuel Klausner, "Recreation as Social Action," in *A Program for Outdoor Recreation Research* (Washington, D.C.: National Academy of Sciences, 1969), p. 69.

31. Alvar L. Nieves and Rabel Burdge, "Black-White Differences in the use of Leisure," draft of paper presented at the 34th Annual Meeting of the Southern Sociological Society, Miami Beach, Florida, May 6, 1971, p. 13. This study is one of very few that have attempted to relate socioeconomic variables to use of leisure time or recreation participation.

32. Edwin J. Staley, "Determining Neighborhood Recreation Priorities: An Instrument," *Journal of Leisure Research*, I (Winter 1969), p. 70.

33. *Ibid.*, p. 69.

34. *ORRRC Study Report 21*, p. 10.

35. Robert Everly, "Put Parks Where the People Are," *The American City*, March 1972, p. 72.

36. Vaughn, "In Search of Standards," p. 258.

37. Michael J. Ellis, "The Rational Design of Playgrounds," in *Educational Products Information Exchange Institute Product Report*, VIII - IX (1970), p. 9.

38. Michael J. Ellis, "Play: Theory and Research," revised article based on a presentation to the National Symposium on Park Recreation and Environmental Design (Chicago: February 16, 1971), p. 3.

39. Kirschner Associates, Inc., *A National Evaluation of the Summer 1970 Neighborhood Youth Corps Recreation Support Program*, prepared for U.S., Department of Interior, Bureau of Outdoor Recreation, December 1970.

40. Emrie, *Recreation Problems*, pp. xi, 6.

41. At the Gateway Hearings, Richard Plunkett of the National Audubon Society gave "the number of carless households within two hours of Gateway. . . as 28%,. . . 14% of the carless households in the Nation." *ORRRC Study Report 21*, p. 10.

42. *New York Times* editorial of February 21, 1972, quoted in the Conservation Foundation's Task Force report, "The National Park System and Urban America," (Washington, D.C.: The National Conservation Foundation, 1972), p. 6.

43. Paul M. Friedberg, *Play and Interplay* (New York: Macmillan, 1970), pp. 129-134.

44. *Ibid.*, pp. 91-94.

45. *Report of the National Advisory Commission on Civil Disorders* (New York: Bantam Books, 1968), p. 8.

46. National League of Cities, Department of Urban Studies, *Recreation in the Nation's Cities: Problems and Approaches*, prepared for the Bureau of Outdoor Recreation (Washington, D.C.: Government Printing Office, 1968), p. 4.

47. Charles Cicchetti provides an excellent statement of this problem in "Some Economic Issues in Planning Urban Recreation Facilities," *Land Economics*, XLVII (February, 1971), pp. 14-23.

48. National League of Cities, *Recreation in the Nation's Cities*, p. 17.

49. *Ibid.*, p. 23.

50. Simpson F. Lawson, ed., *Workshop on Urban Open Space* (Washington, D.C.: Government Printing Office, 1969), pp. 14-17. Another discussion of community involvement is in Community Council of Greater New York, *Urban Parks and Recreation*, pp. 46-51.

51. William Emrie describes the action of the Model Cities program in California as "a start," however "the attempts to combine the necessary sophisticated planning and a high degree of grassroots' participation appears to have imposed a severe strain on the programs in California. In many of these programs, recreation and leisure activities appear to be, at best, a superficial consideration." Emrie, *Recreation Problems*, p. 1.

52. National League of Cities, *Recreation in the Nation's Cities*, p. 15.

53. John G. Williams, "Staff Development," galley sheets of NRPA forum in Houston, October 18, 1971.

54. Klausner, "Recreation as Social Action," p. 69.

55. Vaughn, "In Search of Standards," p. 257.

56. John V. Krutilla and Jack L. Knetsch, "Outdoor Recreation Economics, Annals of the American Academy of Political and Social Science, CCCLXXXIX (May, 1970), 69.

57. John L. Lindsay and Richard A. Ogle, "Socioeconomic Patterns of Outdoor Recreation Use Near Urban Areas," Journal of Leisure Research, IV (1972), 19-24.

58. The Land and Water Conservation Fund provided $103,200,000 to local governments from its inception in 1965 through December 31, 1970. The grants are in the form of 50% matching funds. During the same period a total of $224,000,000 was provided for state and regional agencies and $471,666,722 to Federal Agencies (NPS, FS, BSFW, and BLM). Not only have Federal agencies acquiring land often far removed from urban centers received more than 50% of the L & WCF monies, but also allocation procedures written into the law by Congress have further restricted the amount of money spent in Urban areas. The Conservation Foundation describes the result: in fiscal 1972, for example, the per capita allocations for such open states as Wyoming and Idaho were $6.44 and $3.28 respectively, while states with denser populations had to be content with far less - $1 for New Jersey, 87 cents for New York and $1.26 for Maryland. Conservation Foundation, CF Newsletter, March 1972, p. 2.

59. A study of New York noted that "the Department of Parks does not have adequate recreation personnel. Only one-half of the park playgrounds have year round leadership. . . . curtailing programs and shifting personnel constantly is not a sound recreation practice." New York City Department of City Planning, Recreation Needs, p. III-14.

60. Dwight Rettie, interview with authors, July 1972.

61. Mait Associates, "An Analysis of Public Safety," pp. 4-17.

62. Jane Jacobs, "The Uses of Sidewalks: Assimilating Children," in Harold Proshansky, William Ittelson, and Leanne Rivlin, editors, Environmental Psychology (New York: Holt, Rinehart and Winston, 1970), p. 383.

63. Anthony Gramza, "New Directions for the Design of Play Environments," presented at the National Symposium on Parks, Recreation, and Environmental Design, Chicago, February 16, 1971, p. 5.

64. Ellis, "The Rational Design of Playgrounds," p. 8.

65. Nanine Clay, "Miniparks - Diminishing Returns," Parks and Recreation, VI (January 1971), p. 23.

66. Quoted in *Ibid*., p. 25.

67. Friedberg, *Play and Interplay*, p. 153.

68. *Ibid*., p. 15.

69. *ORRRC Study Report 21*, p. 29.

70. D. James Lindsay, "Protecting and Managing Trees and Wooded Areas Subjected to Heavy Recreational Use," Symposium on *Trees and Forests in an Urbanizing Environment* (University of Massachusetts: Cooperative Extension Service, 1970), p. 113.

71. Saul Rich, "Effects of Trees and Forests in Reducing Air Pollution," in *Trees and Forests in an Urbanizing Environment* (University of Massachusetts: Cooperative Extension Service, 1970), pp. 29-33.

72. Raymond Leonard, "Effects of Trees and Forests in Noise Abatement," *Trees and Forests in an Urbanizing Environment* (Amherst: University of Massachusetts, August 1970), p. 38.

73. Wilfrid Bach, "7 Steps to Better Living on the Urban Heat Island," *Landscape Architecture*, LXI (January, 1971), pp. 136-137.

74. Ibid., p. 137.

75. Vaughn, "In Search of Standards," p. 254.

76. Abbott Ferriss, "Social and Personality Correlates of Outdoor Recreation," *Annals of the American Academy of Political and Social Sciences*, CCCLXXXIX (May, 1970), 49-50.

77. Burch and Shelstad, "Nature, Forests and Urban Children," p. 17.

SECTION V
FUTURE RECREATION TRENDS

Future recreation trends necessitate balancing numbers of participants and types of use with environmental considerations. All forecasts of participation reveal an accelerating demand for the outdoors. The Bureau of Outdoor Recreation anticipates a 160% increase in recreation occasions from 1965 to 2000.[1] All factors contributing to recreational demand -- leisure time, education, disposable income, population growth, and mobility -- will continue to change in the direction of increased participation.

V.A Population Growth Factors

The recreation demand of a growing population will place even greater pressure upon existing facilities. Population projections for the years 1980 and 2000 indicate sustained growth within a broad spectrum of patterns. The limits of this range are represented by Bureau of the Census population series B and E. Series B (3100 children born per 1000 women) and Series E (2100 children born per 1000 women) are the highest and lowest birth rates currently being predicted. These patterns would result in significantly different population sizes. While series B leads to an increase from the 1970 population of 16.9% in 1980 and 58.4% in 2000, series E only produces a rise of 11.3% and 31.5% respectively. Both cases result in growing recreation demand, but at rates which may have differential environmental impact.[2]

Growth in accordance with series B would result in more rapidly accelerating demand and participation in outdoor recreation. Unless the supply of facilities were greatly expanded or access is restricted, the sheer number of participants and intensity of use might threaten the reusability of the recreational resource. More people intensify the problems of congestion and ecological damage.

These growth limits result in significant demographic changes as well. The age distribution for series B in 1980 and 2000 nearly duplicates that of 1970, while series E would lead to a much older population (see Table 5.1). The concentration of a less rapidly growing populace in older age categories is quite evident. Median age for series B in 1980 and 2000 is 27.8 and 27.2 years respectively; for series B it is 29.3 and 34.0 years.[3] Whether the shift in age distribution will affect demand or participation in certain activities is difficult to assess. One analysis points to the negative effect of increased age upon participation as the most important result of series E growth.[4] Investigation is needed to determine the age sensitivity of various outdoor activities. Recreation planning must consider the potential implications of an older population for outdoor involvement.

TABLE - 18

Population Distribution by Age

		Series B		Series E	
	1970	1980	2000	1980	2000
Under 16 years	30.7%	29.4%	31.4%	25.9%	24.2%
16 to 24 years	15.7%	16.0%	15.6%	16.8%	13.6%
25 to 54 years	34.9%	35.7%	36.9%	37.5%	42.9%
55 years and over	18.7%	18.9%	16.1%	19.8%	19.4%

Source: Denis F. Johnston, "The Future of Work: Three Possible Alternatives," Monthly Labor Review, LXXXXV (May, 1972), 7.

All population projections assume an increasing concentration of Americans in metropolitan areas. While 71% of the 1970 population resided in a metropolitan center, an anticipated 85% will do so by 2000. This trend is particularly evident in the metropolitan units of one million inhabitants or more. In 1970 44% of the population lived in such areas and by 2000 65% (series B) or 63% (series E) will be metropolitan dwellers. Many of these urban centers lie along the coasts, implying increased demand for shoreline recreation. Substantial growth in western and southern cities will increase use of the public lands. Unless recreational facilities are integrated in the planning of metropolitan regions, the additional residents will utilize federal, state, local, and private areas for outdoor activity.[5]

As the population increases proportionately, more Americans will engage in outdoor activities. Recent studies confirm that professional and white-collar workers with advanced education and good income are the most active outdoor participants. Professional and technical jobs are currently expanding twice as fast as the total labor force.[6] The trend toward a better educated population will continue through 1980. The high school graduation rate, proportion of young people earning college degrees, and the proportion of advanced degrees earned will be greater in 1980-81 than in 1970-71.[7] As education stimulates interest in all forms of outdoor activity, a 7% annual rise in disposable income during the 1970's will facilitate participation.[8] During the next decades more Americans will gain the jobs, education, and income that provide the opportunity and interest to use the public lands, shoreline, and private facilities.

V.B Increased Leisure Time

A population increasingly capable and desirous of outdoor involvement can only participate during nonwork time. All forecasts predict increased leisure for Americans, but the form this takes may be the most important factor contributing to the magnitude and consequences of participation.

Whether free time occurs at the end of each day or is concentrated on long weekends or vacations will affect the demand for nearby and distant facilities. Recent trends indicate an increase in blocks of leisure time which encourages recreational movement to distant outdoor areas.[9]

Shortening the workweek has appeared as the most innovative means of expanding free time.[10] The progress and effects of such a change are documented in Kenneth E. Wheeler's study for the American Management Association entitled The Four-Day Week. Mr. Wheeler estimated that approximately 100,000 employees in 700 to 1000 manufacturing firms were currently working a reduced workweek. Based on a survey of American Management Association member companies, he concluded that "within little more than five years, and surely within ten, a sizable segment, if not a majority of American workers may experience a workweek of four days -- and in some cases even fewer."[11]

Current usage of the term four-day week usually refers to the compression of present working hours (approximately 40) into four rather than five working days. Management has in every case initiated this rearrangement in work time. Employers are attempting to increase output and recruitment, improve customer and employee relations, and reduce absenteeism, tardiness, and turnover.[12] The effort to maximize efficiency with constant labor costs concentrates leisure time in a larger and more usable form.

While labor has traditionally sought fewer work and greater leisure hours, it refuses to accept a shortening of the workweek accompanied by a lengthening of the work day. The eight hour day represents a major achievement for organized labor. I.W. Abel, president of the United Steel Workers, insists that American labor wants work opportunity for more persons through "less hours of work [and] fewer days of work.[13] Apart from the questions of fatigue and health arising from long working hours, labor's best interests are not served in assenting to a four day, forty hour arrangement. AFL-CIO economist Rudy Oswald insists that the "forty-hour week is already dead," and must now be replaced by a four-day, thirty-two hour week.[14] Organized labor seeks an increase in leisure time, but one that does not jeopardize current wage and hour levels.

Leaders of the United Auto Workers emphasize the need for increased leisure to compensate for unrewarding work. Douglas A. Fraser, UAW vice-president, believes rearranged and shortened work schedules will help calm the growing proportion of young laborers. Repetitive tasks force employees to turn to cultural and recreational activities for personal satisfaction and a sense of achievement. Thus more time will be needed for leisure pursuits.[15] Fewer days and fewer hours appear to be future union bargaining demands.[16]

Even at this early stage, the consequences of four consecutive work days and three-day weekends are discernible. Most industry currently operates on a four-day week ten percent of the year as a result of federal legislation. Since

1971, five of the ten national holidays have been observed on Mondays. The Discover American Travel Organization (DATO) documented the "highly favorable results which have accrued to the travel industry" as a consequence of the additional long weekends. This report indicates that those businesses which cater to tourists arriving in the family car are profiting most. Many resort or tourist areas experienced heavy increases over normal weekends or over the same weekends during the previous year. With more concentrated leisure time, people took more trips away from home.[17]

Riva Poor evaluated the effects of a shorter week by interviewing the employees at thirteen four-day firms in July and August, 1970. For this limited sample, all free time activities increased during the longer weekend. However, the most significant gains in recreation occurred in the category of participant activities (travel, fishing and hunting, athletics, swimming, and boating). Respondents increased their travel by 152% and swimming and boating by 319% with the additional leisure day. Over half the workers traveled regularly now, as opposed to one-fourth before. One-third of the sample spent more money on free time activities than before the shorter week began. If these findings could be generalized, the consequences for recreational lands and facilities would be immense.[18]

These limited studies have focused on one dimension of the four-day week, that which includes four days of work followed by a long weekend. An investigation of the effects of a shorter workweek upon transportation has made the alternatives inherent in a four-day scheme explicit. Although average daily urban travel would not be affected by a reduced workweek if everyone worked the same four days, peak period traffic would be significantly altered. By varying the sequence of working days and number of employees present on any given day, five basic four-day schedules appear possible (see Table 19). Comparison of the traffic conditions generated by each of these arrangements with user capacity on a portion of the Los Angeles freeway system revealed those patterns which maximized free flow traffic. Demand remained in closest harmony with capacity when the four-day week was equally rotated over six days (67% of the employees worked on any given day). The next best solution was equal rotation of employees over five days from Monday to Friday (80% of the employees worked on any given day). Varying the workweek in these ways distributed peak demand within capacity limitations.[19]

Outdoor recreation demand can be spread in a similar manner that reduces the intensity and hence impact of participation. Research conducted by the Department of Transportation confirms that most outdoor activities are concentrated on weekends. With most leisure time concentrated on Saturdays and Sundays, these are the times of intense recreational activity and resulting environmental damage. Variations of the four-day week offer ways of distributing demand and thereby reducing impact.[20]

TABLE 19

Possible Weekly 4-Day Working Arrangements

Work Schedule	Percent of Employees on 4-Day Working a Given Day					
	M	Tu	W	Th	F	S
1. Equally rotated M-F	80	80	80	80	80	-
2. 1/2 M-Th; 1/2 Tu-F	50	100	100	100	50	-
3. Equally rotated M-Sat	67	67	67	67	67	67
4. 1/3 M-Th; 1/3 Tu-F; 1/3 W-Sat	33	67	100	100	67	33
5. 1/2 M-Th; 1/2 W-Sat	50	50	100	100	50	50

Source: Vincent R. Desimone, "The 4-Day Workweek and Transportation," Joint ASCE-ASME Transportation Engineering Meeting, Seattle, Washington, July 26-30, 1971.

Flexible work schedules can alleviate crowding on the roads as well as in recreational areas. Four working days spread over a five or six day period could provide larger blocks of leisure time during different segments of the week. Existing problems of congestion and excessive use are partially a result of standardized work and leisure patterns. By concentrating leisure during the week rather than only on the weekend, and vacations throughout the year rather than only in summer, existing demand could be satisfied without exceeding an area's carrying capacity. Although distributing free time conflicts with the traditional weekend and the rigidity of the school system, this possibility allows maximum use of existing facilities with minimal damage.

The possibilities inherent in a four-day scheme are matched by the difficulties of affecting such a change. Management and labor would have to adopt special procedures to accomodate new production conditions. At present, basic differences over the length of the work day and week obscure the problems of adjustment. Labor is unlikely to consent to more than an eight-hour day without overtime pay, nor is management willing to reduce hours and maintain wages unless substantial gains are made in productivity. Movement toward a shorter week will come slowly, but fewer hours per day and days per week seem eventually inevitable.[21]

Additional holidays and longer vacations will provide more immediate increases in leisure time. Members of the AFL-CIO are attaining ten and eleven paid holidays, while office workers received an average of eight and plant workers an average of 7.5 in 1968. Some unions have just negotiated for seventeen paid holidays (Transit Union and New York School District), while others have just won their thirteenth (machinists at McDonnell-Douglas and the Ladies' Garment Workers). These victories will encourage other unions to seek similar benefits, leading to a greater average number of holidays for all workers.[22]

Collective bargaining in 1971 also produced significant vacation increases. Many industries reduced the eligibility requirements for vacation increments. More contracts joined the trend of providing a fifth and sixth week of vacation for long-service employees. Other benefits such as plant shutdowns between Christmas and New Years have also spread.[23]

Shortening the working life of Americans will continue to provide large blocks of leisure time. The increase in necessary educational attainment has delayed entrance into the work force, thus allowing more discretionary time at a young age. Retirement age is also decreasing, as illustrated by the United Auto Workers' contract provision granting full pension benefits at age 56 with thirty years of service. This trend will become more widespread among laborers.[24]

Leisure time will steadily increase for Americans during the next few years. Rather than reductions in daily working hours, this gain will be primarily concentrated in larger units. More paid holidays, longer vacations, earlier retirement, and additional schooling will allow blocks of time for personal use. These will encourage frequent participation in outdoor activities far from home. Visits to the national parks and forests, shorelines, and mountain resorts will certainly rise.

Variations of the four-day week offer a major source of leisure time as well as means of distributing recreational demand. Fewer working days will allow greater involvement in all outdoor events. However, the scheduling of nonwork time can help allocate recreational use over the limited supply of facilities. Fewer numbers of participants at any given time may reduce ecological damage and enhance the quality of the experience. Greater flexibility in work and leisure might thus allow existing resources to satisfy growing recreation demand with minimal impact. The federal government might well discuss the potential of this scheme with both industry and labor.

All factors contributing to outdoor recreation demand point to a continuing boom in participation. As the opportunity and interest to pursue outdoor activities increase, the reusability of limited resources will be ever more imperative. Within the scope of governmental and private recreational planning, environmental considerations must increasingly receive attention. Enjoyment of the outdoors for present and future users necessitates knowledge of an area's sensitivity. Unless attempts are made to balance numbers of participants, kinds of activities, and frequency of use with a resource's ecological and psychological carrying capacity, the supply will deteriorate and the quality of experience will decline. Current and future recreational planning must integrate human desires with environmental necessities.

FOOTNOTES

1. U. S., Department of the Interior, Bureau of Outdoor Recreation, Outdoor Recreation Trends (Washington, D.C.: Government Printing Office, 1967), pp. 1-24.

2. Denis F. Johnston, "The Future of Work: Three Possible Alternatives," Monthly Labor Review, LXXXXV (May, 1972), 7.

3. U. S., Bureau of the Census, Current Population Reports, Series P-25, No. 470, "Projections of the Population of the United States, by Age and Sex: 1970 to 2020" (Washington, D.C.: Government Printing Office, 1971).

4. Charles J. Cicchetti, "Population, Its Characteristics, and Congestion as They Affect Participation in Outdoor Recreation in the United States," Resource and Environmental Consequences of Population Growth in the United States, unpublished paper, 1972.

5. Jerome Pickard, "U. S. Metropolitan Growth and Expansion, 1970-2000, with Population Projections," prepared for the Commission on Population Growth and the American Future, to be published in 1972, p. 1.

6. Seymour Wolfbein, Work in American Society (Glenview, Ill.: Scott, Foresman and Company, 1971), pp. 45-46.

7. U. S., Department of Health, Education, and Welfare, Office of Education, National Center for Educational Statistics, Projections of Educational Statistics to 1980-81 (Washington, D.C.: U.S. Government Printing Office, 1972), p. 2. These statistics actually minimize the educational attainment of the population; many high school diplomas and bachelor's degrees are earned by people older than the common graduation age.

8. Merrill Lynch, Pierce, Fenner, & Smith, Changing Leisure Markets, March, 1972.

9. Janice Neipert Hedges, "A Look at the 4-Day Workweek," Monthly Labor Review, LXXXXIV (October, 1971), 33-37.

10. Time-budget analysis in the Soviet Union has dispelled the notion that reductions in worktime necessarily imply gains in leisure time. Prukinsky's findings in 1959 indicated "that despite a shorter workweek and the freeing of Russian women from almost an hour of housework over the intervening 35 years, the amount of discretionary 'leisure' time had increased only slightly among women and had actually declined for men. The decreases in work and housework had been absorbed by marked increases in the amount of time spent waiting in queues and shopping, as well as traveling to and from work."

John P. Robinson and Philip E. Converse, "Social Change Reflected in the Use of Time," in Campbell and Converse, The Human Meaning of Social Change (New York: Russell Sage Foundation, 1972), pp. 18-19.

11. Kenneth E. Wheeler, Richard Gurman, and Dale Tarnowieski, The Four-Day Week, AMA Research Report (New York: American Management Association, Inc., 1972), p. 6.

12. Riva Poor, ed., 4 Days, 40 Hours, Reporting a Revolution in Work and Leisure (Cambridge, Mass.: Bursk and Poor, 1970), p. 15.

13. "Why the Work Week Pattern is Changing," Business Week, March 13, 1971, pp. 108-109.

14. Rudy Oswald, "The Union View of the Rearranged Workweek," Speech before the 43rd Annual Personnel Conference, American Management Association, Chicago, February 10, 1972.

15. Wheeler, Gurman, and Tarnowieski, Four-Day Week, pp. 36-37.

16. United Auto Workers, Solidarity, XV (April, 1972), 14.

17. Discover America Travel Organization, DATO Development Planning Council, "Interim Report, Impact of Monday Holiday Legislation," December, 1971, p. 7.

18. Poor, 4 Days, 40 Hours, pp. 105-106, 114-16.

19. Vincent R. Desimone, "The 4-Day Work Week and Transportation," Joint ASCE-ASME Transportation Engineering Meeting, Seattle, Washington, July 26-30, 1971). These calculations were based upon the assumption that in one case 100% and in another 35% of the work force would be on a four-day week. The results discussed above apply to both cases and are significant since at most 35% to 40% of the labor force would be affected by the four-day week before 1990.

20. U.S., Department of Transportation, Federal Highway Administration, "Weekend Recreational Travel Patterns," Highway Planning Technical Report, No. 18 (February, 1971), pp. 4-14.

21. Hedges, "Look at the 4-Day Workweek," pp. 35-36.

22. Rudy Oswald and Phillip Ray, "Collective Bargaining: New Outlook in 1972," reprinted from AFL-CIO American Federationist, March, 1972.

23. Ibid.

24. Correspondence with Paul A. Wagner, United Auto Workers, Washington, D.C.